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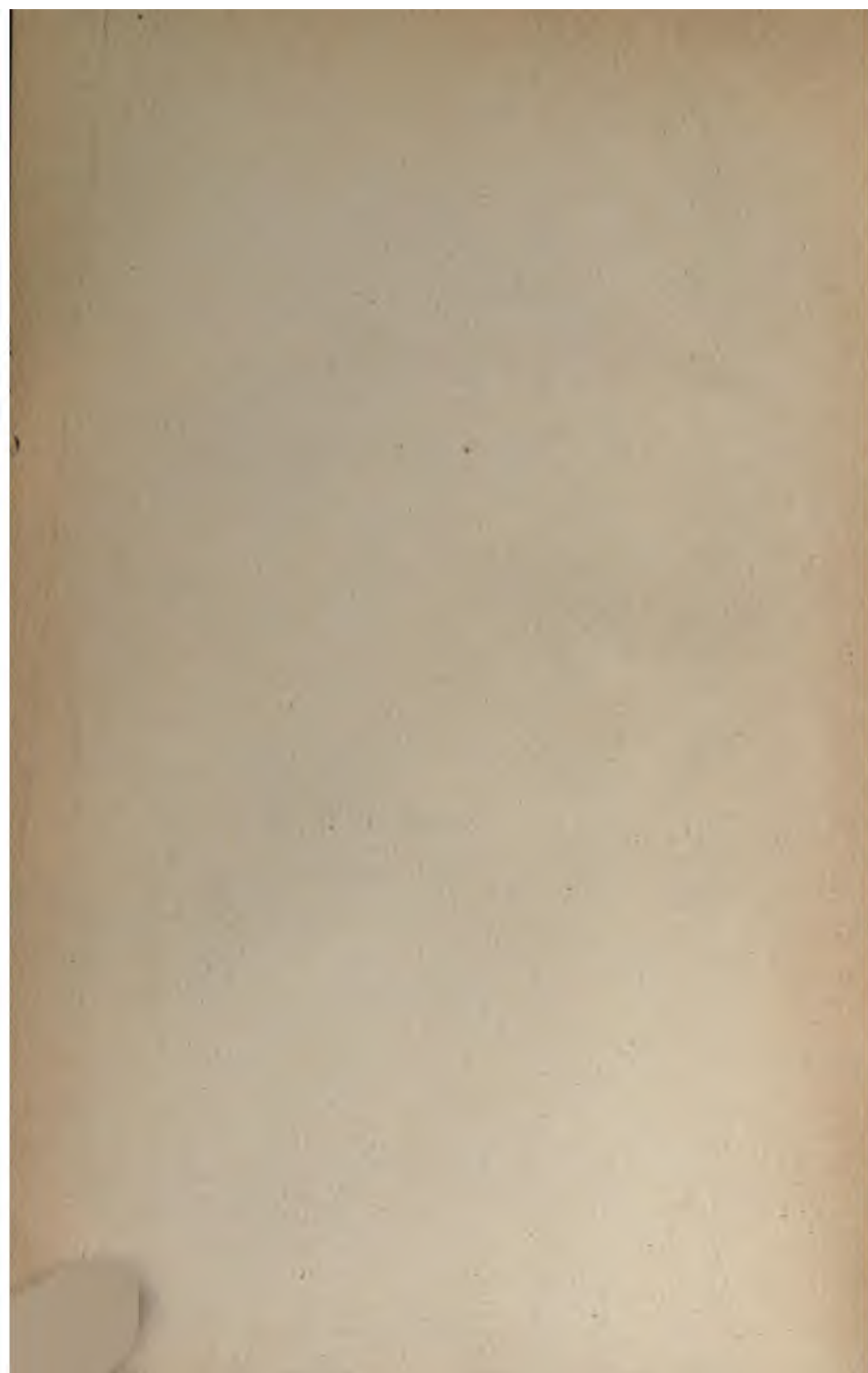
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LIFE AND LETTERS
OF
DR. WILLIAM BEAUMONT



Mr Beaumont

LIFE AND LETTERS
OF
DR. WILLIAM BEAUMONT

**INCLUDING HITHERTO UNPUBLISHED DATA CONCERNING
THE CASE OF ALEXIS ST. MARTIN**

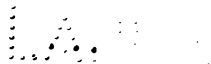
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WITH FIFTY-EIGHT ILLUSTRATIONS

ST. LOUIS
C. V. MOSBY COMPANY

1912



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THIS VOLUME
IS
AFFECTIONATELY DEDICATED
TO
MY WIFE AND CHILDREN

31317

PREFACE

This biographic sketch of William Beaumont is presented on the hundredth anniversary of his entry into the practice of medicine. Just a century ago—June 9, 1812—he was granted a license by the Third Medical Society of the State of Vermont to practice “physic and surgery,” and a decade later—June 6, 1822—destiny let fall in his path the opportunity which he recognized, grasped, and improved with a zeal and an unselfishness not excelled in the annals of medical science. Ever since that time the story of Dr. Beaumont and the case of Alexis St. Martin has had a peculiar fascination for persons in various walks of life—from the school-boy, who gains his first knowledge of the incident from his “Essentials of Physiology,” to the scientist, who, by comparison of Beaumont’s work with the most recent developments in the physiology of digestion, marvels at the thoroughness of this remarkable piece of research, conducted by a young army officer under the most discouraging circumstances.

Though there have been a number of brief biographic sketches of Beaumont presented in the form of addresses on various occasions, they have dealt with the man largely from the standpoint of his contribution to medical science, under the general assumption, no doubt, that little was to be learned of other phases and stages of his life. This impression was likewise shared by me until through my studies the various chapters of his life began to unfold, when my greatest difficulty was, not how to obtain sufficient material for his biography, but how to condense into a volume of reasonable size the mass of facts gathered from hitherto unexplored sources. The investigation once begun, hidden treasures of information were revealed without number.

The nucleus of this work was formed from the contents of two old chests found in possession of Mrs. Sarah Beaumont Keim, who at the age of four score years and ten still lives in the city of St. Louis, where her father, Dr. Beaumont, spent the last twenty years of his life and where his remains lie buried. To her my profound thanks are due for the great privilege of delving into those old records of the past. These strong boxes proved to be a veritable storehouse of biographic material in the form of documents, manu-

scripts, memoranda, diaries, letters, clippings, books, etc. Beaumont was so methodical throughout his whole life that he had treasured every scrap of paper which seemed to him of the slightest importance, and preserved not only all letters received, but also a rough draft in his handwriting of those sent by him, a fact which renders the material of unusual value and importance from an historic standpoint.

It would seem ostentatious on my part to enter into any extended recital of the difficulties encountered in deciphering, abstracting, and copying this vast material, or to enumerate the long list of inquiries that it was necessary for me to make in order to secure a complete chronological arrangement of the data. It is sufficient to say that in the preparation of this work several hundred letters were exchanged with many individuals in various sections of the United States in which Beaumont at some time lived and conducted his activities. Librarians, town clerks, postmasters, Beaumont descendants, and the descendants of those who through association seem to have exerted an influence on his character, received requests from me to aid in the investigation of such sources of information as were open to them, and almost invariably these appeals met with replies containing either the definite information desired, or the suggestion of sources from which it might be obtained. To these persons, without whose aid my work would have been incomplete, I wish to extend my sincere thanks, and at the same time express my regrets that space will not permit an enumeration of all their names and contributions. During the extensive correspondence, which proved so important in the evolution of this biography, I often recalled to mind Boswell's statement in his preface to the "Life of Samuel Johnson": "I was sometimes obliged to run half over London in order to fix a date correctly; which, when I had accomplished, I well knew could obtain me no praise, though a failure would have been to my discredit."

It was interesting to see the data thus gathered from far and near fall into place as do the stones in an arch. Even replies of a negative character were of positive value, for the biographer gains a peculiar satisfaction from the knowledge that every promising thread of information was at least followed to its end. For example, it is of the greatest importance to have learned from officials that there are no records bearing on Beaumont to be found at

Plattsburgh Barracks, his rendezvous in the War of 1812; at Fort Mackinac, where he had St. Martin under treatment from 1822 to 1825; at Jefferson Barracks and the arsenal at St. Louis, the scenes of his activities from 1835 to 1840; and among such archives as those of the Wisconsin Historical Library at Madison, the Kellogg Public Library at Green Bay, Wis., etc.

To Surgeon-General Torney and his capable associates in the surgeon-general's office and in the Surgeon-General's Library I wish to extend my sincere thanks for many acts of kindness. Through their courtesy I gained personal access to archives including many volumes of old ledgers containing abstracts of letters received at and sent from the surgeon-general's office from 1812 to 1840, the period during which Beaumont was an officer in the army, from which many important dates and interesting facts were gleaned. In addition to this, through the remarkable system maintained in his department, the surgeon-general succeeded in bringing to light for me a number of most important letters, which had for years been stored in the basement of the Surgeon-General's Library. I can not say too much in recognition of the courtesy and substantial aid extended me by Lieutenant-Colonel J. R. Kean and every other member of this department with whom it was my good fortune to come in contact.

It gives me pleasure to say a word in commendation of the genial New England town clerks, loyal custodians of those priceless volumes—the New England town records—on which is based much of the early history of our country. I am especially indebted to them for the opportunities which enabled me to collect most of the material contained in the chapter on Genealogy, and I shall always recall with pleasant recollections the moments spent with them in an investigation of the old town records, dating back as far as 1680. This chapter was undertaken not only with a view to completeness, but also with a desire to determine, if possible, whether heredity played any part in accounting for William Beaumont's unusual powers of keen observation and tenacious perseverance.

Sir William Osler, whose Biographical Essays are an inspiration to every student of American medical history, has done me the honor to write an introduction to this book, for which favor I desire to express my grateful appreciation.

My thanks are due to Miss Helen S. Bixby, of Plattsburgh, N. Y.,

for her careful and successful search through the files of the *Plattsburgh Republican* from 1811 to 1835, the results of which are evident in the early chapters of this book. I am likewise indebted to Mrs. George Fuller Tuttle, of Plattsburgh, author of "Three Centuries in Champlain Valley," for valuable data; to Mrs. C. C. Rishop, of Dorchester, Mass., for information concerning her grandfather, Dr. Beaumont's medical preceptor; to Mrs. Lydia Brown, of Hartford, Conn., for valuable letters throwing light on his early life; and to many others too numerous to mention here for aid in collecting material relating to the life of Dr. Beaumont. To those of my friends who read portions of my manuscript and made recommendations I wish to acknowledge indebtedness for the interest manifested.

Many interesting anecdotes concerning Dr. Beaumont have come to me in the course of this work, but, when compared with absolutely authentic data in my hands, I found so many discrepancies in them that I determined to discard all that could not be verified, and to confine my narrative to such statements as could be substantiated by documentary evidence.

As the same remark that has been applied to most men who have accomplished great deeds has also been made concerning Beaumont—that he was only a man of destiny, that mere accident brought to him a certain opportunity, that another in the same position would have accomplished similar results—I have added in the appendix a list of literature references and abstracts of cases of gastric fistulæ that occurred prior to the case of St. Martin. Though some of these cases fell into the hands of true scientists in large medical centers, where every facility was afforded for investigation, not one case was systematically utilized to increase our then meager knowledge of the physiology of digestion. No comment is therefore necessary to make conspicuous by comparison the indefatigable efforts of Dr. Beaumont in his research.

In conclusion it may be stated that it has not been my endeavor to write a popular biography, which so frequently necessitates sacrificing fact for style. I have therefore avoided altering the phraseology of Dr. Beaumont, and have presented intact such parts of his letters and papers as are used in this book. The peculiar composition, orthography, and capitalization of Dr. Beaumont's letters and memoranda have been followed in order to retain his char-

acteristic style, and only so much of the punctuation has been corrected as seemed necessary to aid the reader in more readily comprehending the ideas intended to be conveyed. This desire to retain the writer's individuality has been followed also in the letters written by others to Dr. Beaumont. Preserving Dr. Beaumont's diction gives the reader his mannerisms of speech, his unique and forceful modes of expression, and at the same time presents a concept of the man's traits and character which could not possibly be conveyed by the words of another. In this I again observe Mr. Boswell's idea when he said: "Indeed I can not conceive a more perfect mode of writing any man's life, than not only relating all the most important events of it in their order, but interweaving what he privately wrote, and said, and thought; by which mankind are enabled as it were to see him live, and to 'live o'er each scene' with him, as he actually advanced through the several stages of his life. . . . And he will be seen as he really was, for I profess to write, not his panegyrick, which must be all praise, but his life; which, great and good as he was, must not be supposed to be entirely perfect. . . ."

J. S. M.

ST. LOUIS, June, 1912.

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INTRODUCTION

It is a great pleasure to introduce to the Profession a worthy study of William Beaumont, in whose work three generations have now been interested—as well as in “that old fistulous Alexis,” the subject of his experiments. While the chief facts of his life are well known from fragmentary sketches that have appeared, the sources for a full biography have only recently been made available. The family papers have been placed at the disposal of Dr. Myer, to whom it has been a labor of love to present a picture of the first great American physiologist in its proper setting.

To the medical bibliographer there are few more treasured Americana than the brown-backed, poorly printed octavo volume of 280 pages with the imprint “Plattsburgh, Printed by F. P. Allen 1833.” To have had the book printed at Philadelphia, and in better style, as Dr. Franklin Bache suggested, would not have been in keeping with the conditions in which the work was done—in the backwoods, in camps, at prairie garrisons—and it was characteristic of the man to overcome the difficulties of having the book published at a small army post of Northern New York.

To the physiologist Beaumont’s experiments have always had an extraordinary interest. In the first place his scientific method is admirable. As has been remarked by Dr. Combe—“It would be difficult to point out any observer who excels him in devotion to truth, and freedom from the trammels of theory or prejudice. He tells plainly what he saw, and leaves every one to draw his own inferences; or, where he lays down conclusions, he does so with a degree of modesty and fairness of which few perhaps in his circumstances would have been capable.” Beaumont himself remarks in the Preface: “I submit a body of facts which can not be invalidated. My opinions may be doubted, denied, or approved, according as they conflict or agree with the opinions of each individual who may read them, but their worth will be best determined by the foundation on which they rest—the incontrovertible facts.”

His experiments settled finally the chemical nature of the digestive process so much discussed from the days of the fundamental experiments of Réaumur (1752) and Spallanzani (1783). To appreciate the importance of Beaumont’s experiments we must read

contemporary accounts of the nature of stomach digestion, in which the old views of concoction, putrefaction, trituration, fermentation and maceration are all considered. Even before Réaumur and Spallanzani shrewd guesses were made. I came across the other day the manuscript notes of lectures on medicine of one of my seventeenth century predecessors at Oxford, whose quaint description of digestion is worth quoting:

“ . . . Thus then ye meate being chaw'd in ye mouth receives ye first tincture from ye spittle, and going through ye oesophagus is imbued with ye same, till in ye fundus of ye stomach it lyes in a liquor of ye same nature but greater activity, & being encompassed about by ye coate of ye stomach, it lyes in that watry bed as in its proper menstrum: & receiving by little & little this piercing and searching liquor into all its parts and ferments, and so dissolves into a kind of mash, from whence ye nutrimentall parts of life of ye meate are now become easily separable from ye faeculent. Which being done, ye stomach having performed its proper worke, by ye compression of itselſe sends it forth through ye Pylorus into ye guts, leaving a small quantity still as ye remaining ferment, necessary for ye digestion of ye next meale. . . . That such a ferment belongs to ye stomach is clear, by ye stomachs of calves, which ye dayry-maides use for runnet in making cheese: and strong cheese is very good for digestion, because it has much of ye runnet, & so adds a connaturall ferment to ye stomach. This I conceive to be ye true Nature of digestion, by which it appears to be no boyling or proper concoction, nor ye immediate effect of heate, but of an acidity, or subtle penetrating and fermenting quality of ye proper liquor of ye stomach. I conclude therefore ye Digestion is a Solution tending to Putrefaction made by ye way of fermentation.”

Among other important observations may be mentioned the confirmation of the discovery by Prout of the presence of hydrochloric acid in the gastric juice; the recognition that the essential elements of the gastric juice and the mucus secretion were separate; the establishment by direct observation of the profound influence of mental disturbances on the secretion of the gastric juice and on digestion; the fuller and more accurate comparative study of digestion in the stomach with digestion outside the body; the rapid disappearance of water from the stomach through the pylorus; the first comprehensive and full study of the motions of the stomach;

the study of the digestibility of different articles of diet, which remains today one of the most important contributions ever made to practical dietetics; the relation between the amount of food taken and the quantity of gastric juice secreted; and many other points, the true significance of which have not been recognized until the recent researches of Professor Pavlow.

The man was greater than his work; and it is well that the story of Beaumont's life should be told by a member of the Profession of the city of which for so many years he was a distinguished ornament. The pioneer physiologist of the United States and the first to make a contribution of enduring value, his work remains a model of patient, persevering research. The highest praise that we can give it is to say that his life fulfilled the ideal with which he set out, and which he so well expressed in the sentence: "Truth, like beauty, is when unadorned adorned the most, and in prosecuting these experiments and enquiries I believe I have been guided by its light."

WILLIAM OSLER.

LIFE AND LETTERS OF DR. WILLIAM BEAUMONT

CHAPTER I.

GENEALOGY.

The name of Beaumont has been prominent in the annals of French and English history for several centuries. As early as the middle of the eleventh century the second son of Sir Roger Beaumont is said to have stood high in the favor of William the Conqueror, and, though he resided in Normandy, received many honors at the hands of the Conqueror, having been made in turn Constable of Warwick Castle, Councillor to his Majesty, and Baron of the Exchequer of Normandy. He was finally created the first Earl of Warwick by William the Red some time after 1085.¹ The name was not frequently encountered in English history, however, until the latter part of the seventeenth century, when, following the revocation of the edict of Nantes in the reign of Louis XIV., thousands of brave Huguenots were driven out of France and found refuge on foreign shores. The De Beaumonts belonged to this brave old stock, and found their way to England, since which time the name may be found in practically every period of English history and literature down to the present day.

No effort has been made on my part to trace the lineage through the centuries prior to the appearance of the first Beaumont on American soil, deeming it rather irrelevant and not productive of results proportionate to the endless difficulties entailed in such an authentic search.

The first ancestor on American soil of whom we have reliable knowledge was William Beaumont² (1), who settled in Saybrook about 1640.³ In an examination of the old registers,⁴ giving lists of passengers of various vessels that sailed from Great Britain and

¹ "Warwick Castle and Its Earls," by the Countess of Warwick, 1903.

² Inasmuch as there was a William or a Samuel in six consecutive generations, each will be identified in the text by the number after his name.

³ Through the courtesy of the town clerks of Saybrook, Deep River, and Lebanon, Conn., I have been able to trace the genealogy of the Beaumonts from William of Saybrook (1640) down to the present day.

⁴ The New England historical and genealogical registers.

the first settlers of New England, the names of Wm. and Jon Beamond,⁵ aged 27 and 23 respectively, were found among those sailing on the "Eliza de Lond" on April 15, 1635.⁶ Just how and when William came to Connecticut is not a matter of record, but, inasmuch as he married Lydia Danforth, of Cambridge, Mass., it is probable that he was one of the band of early settlers who came from Massachusetts with John Winthrop, Jr. At any rate, he attained early prominence in the little commonwealth, "for at a general Courte of Election in Hartford (Conn.) 20th May, 1652,"⁷ he was chosen Freeman. His name is also found in "a list of names of the Freemen already made in the town of Say Brooke ye 4th, 8th, 1669."⁸ He became, therefore, a personage of considerable importance and wealth in the little Puritan community, enjoying as Freeman not only political prominence, but the usual land grants as well.

According to the old land records of Saybrook,⁹ William Beaumont had seven children—one son, Samuel (1), and six daughters.¹⁰ It will not be amiss to call attention to the fact that John Tully, to whom "Mary Beamon" was married on January 3, 1671, was a man of great wealth and wisdom in his day. "In a list of 46 proprietors of the town common he was the largest owner £608 6s and 8d." The family record quaintly says of him: "So greatly superior was this man's education to most of his contemporaries in America, and so superstitious and ignorant were the common people in the country, that with them he was reputed a conjurer."¹¹ His great wisdom was also indicated by the fact that he edited an almanac.¹²

Samuel (1) married Hester Buckingham, the daughter of Thomas and Hester Buckingham, whose headstones may still be seen in the

⁵It must be remembered that great liberty was taken in those days with the spelling of proper names, and we find therefore the name variously spelled in the records—Beaumont, Beaumont, Beamond, Beamon, Bemont. The name of John Davenport, for instance, in the old records was sometimes spelled Dampont and Dampard. So great were the discrepancies in the spelling of names that the tracing of genealogy is thereby sometimes rendered impossible.

⁶"The Original Lists of Persons of Quality, Emigrants, Religious Exiles, Etc., Who Went From Great Britain to the American Plantation 1600 to 1700," by John Chandler Holten. But one other personage bearing this name was found—namely, that of Thos. Beaumont, aged 23 years—in the list of one hundred and fifty passengers "to be transported to Virginia, imbarqued in the George Joe."

⁷"Public Records of the Colony of Connecticut, May, 1665," by J. H. Trumbull.

⁸"History of Middlesex County, 1635-1685, Old Saybrook," by Wm. Tully.

⁹Saybrook town records (now preserved at Deep River, Conn.), pages 4, 25.

¹⁰Deborah married Thomas Gilbert in 1681. Abigail died in 1683. Rebecca married John Clark in 1684. Lydia married Samuel Boyse in 1667. Sarah married Nathaniel Platt in 1688. Mary married John Tully in 1671.

¹¹"History of Middlesex County" (Conn.), 1635-1885.

¹²By John Tully, Boston. Printed by Benjamin Harris at the London Coffee House, 1693. (Possession of town clerk of Lebanon.)

interesting old Cypress Cemetery out on Saybrook Point, not far from the original site of the old fort constructed by the Puritan fathers. In this fort died Lady George Fenwick, said to be the first white woman to die on American soil. If one visits the old burying grounds today, hers is the first quaint monument that greets the eye. But one looks in vain for a remnant of the inscription that might indicate the resting place of the first of the Beaumont line in America.¹³ The tombs of the Buckinghams are, however, readily found and the inscription is easily deciphered: "Here Lyes y Body of the Revd. Mr. Thomas Buckingham, Pastor of the Church of Christ in Saybrook. Decd. April 7, 1709, in 63rd yr. of his age." The wife had died in the same year at 56 years of age. Mr. Buckingham was undoubtedly a man of great repute, for he was "one of the founders of Yale College¹⁴ and of the Saybrook Platform."

Abiding by the old English custom, Samuel's (1) father left him practically all of his holdings in a "deed of gift" executed in 1687 before John Allen, "one of the council of his Majesties, in his Territory of New England," probably at the time of Samuel's marriage. The old deed is still preserved in the Saybrook records, and is reproduced here in great part, since this estate was the foundation of the holdings of future generations:

To all people &c: I William Beamont of Say-Brook in the County of New London send greeting, Know ye that I the said William Beamont as well for and in Consideration of the naturall affection and love which I have and bear unto my well-beloved son Samuella Beamont of Say-Brook aforesaid as also for other good causes & Considerations me at this present especially moveing, Have given & granted and by these presents do give grant and confirm unto the said Samuella Beamont The one half of my now dwelling house, and the one half of my barn, and the one half of my orchard and homstead in the town plat of Say-Brook upon which my house and Barn now standeth, together with the one half of all other my lands both upland & meadow belonging to Say-Brook. To say the one half of each and every parcell of upland and meadow, as they are bounded in the records of Say-Brook, also I do give unto my said son as aforesaid two steers, each of them one year old and the vantage, one black one with a white face, and one brindled one, as also one feather bed & bolster given him by my wife before her decease. . . . In Witness whereof I have hereunto set my hand and seale this seven & twentieth day of January in

¹³ The inscriptions could not be deciphered on more than half of the old headstones.

¹⁴ Yale College was founded at Saybrook and afterward moved to New Haven. A large boulder, on which is an inscription, marks the site of the original structure, adjoining the old cemetery.



the third year of the reigne of our Souvraign Lord James the Second King of England &c. anno. 1687.

WILLIAM BEAMONT.

Two years later the following codicil was added:

The above said William Beamont hath maid over unto his son Samll Beamont Immediately after his decease to enter upon and take possession off the other half of his dwelling house barn orchard lands both uplands & meadows in the township of Say-Brooke with all the priviledges & Immunities thereunto belonging, also his Team that is to say one yoake of oxen (viz.) one red and one pld ox: with all utensiles thereunto belonging or in any wise appertaining as well to the sd Teams as to Husbandry, And also his great table in the parlour, and also one Rugg, Two blankets and one pair of sheets without any Incumbrance of Debt or Debts, legacie or legacies to be paid by the said Samuell, Also the said William Beamont in the presence of the witnesses whose hands are to this deed of gift doth deliver to his son Samll Beamont one yoake of oxen belonging to the above said Teams as his own proper estate.¹⁵ . . .

William (1) Beamont died in February, 1698,¹⁶ and Lydia, his wife, on August 26, 1686.

As a result of Samuel's (1) marriage to Hester Buckingham, record is found of four children—Samuel, Jr., (2) and three sisters.¹⁷ The son married Abigail Dennison on January 27, 1716. In this case the entire estate had not been deeded to the son, but was distributed. The probabilities are, therefore, that his holdings were small, and that he became a tiller of the soil, though nothing is definitely known of his vocation or attainments. From this union there were again four children—William (2), Samuel (3), and two sisters.¹⁸ William, who is next in line, was born in 1725, and when he became of age left Saybrook, deeding his share in the old home to his brother Samuel,¹⁹ and located in Lebanon, Conn. On December 29, 1747, he married Sarah Everett, of Windham,²⁰ established

¹⁵ The estate in that day was not a small one, for the "uplands and meadows" included such items as: "My house and home lot of 5 ack, abutting east to the lands of francis bushnell, south to the cove, west to Master —, north to highway. 6 Ackers of upland in the old oxpasture abutting east to the meadow, south to lands of master fenwick, west to a highway, north to the land of John Clark Junior. 7 Ackers and half of meadow abutting west to the land aforesaid, east to the cove south to the meadow of master fenwick. 4 Ackers of upland lying in the thousand Ack, abutting east and north to highway, south to lands of John Westall, west to the land of Richard —. 3 Ackers of land in the planting field abutting east to a swamp and south to lands of Will Hide and highway next to the lands of John Clark Senior. My Right in the town Commons belonging to an estate of two hundred pounds. My Right in the oxpasture belonging to an estate of one hundred and fifty pounds." (Saybrook town records, vol. I, page 3.)

¹⁶ Saybrook town records, vol. I, pages 4, 25.

¹⁷ Deborah married Benjamin Ingham, Hester married Benjamin Doty, Anne married William Tully. (Saybrook town records, vol. IV, page 382.)

¹⁸ Lydia and Abigail.

¹⁹ Saybrook town records, vol. VIII, page 326.

²⁰ Windham records of marriage, vol. I; record of First Congregational Church, Lebanon, Conn., member, July 19, 1752.

a home, and seems to have acquired considerable of this world's goods, if we may judge from the Lebanon land records, which show many transfers to him.²¹

William (2) and Sarah had nine children—five sons and four daughters—William (3), Samuel (4), Isaiah, Oliver, Dan, Anne, Sarah, Lydia, and Abigail, whose births and baptisms are a matter of record in the archives of the First Congregational Church of Lebanon²² and in Kingsley's record.²³

Samuel (4) is destined to become the father of the subject of this narrative, and it is he in whom we are more especially interested. We have been able to gather practically no information concerning him, his early schooling, his habits or traits. We know only that during his school boy days there was in Lebanon a notable school conducted by Master Nathan Tisdale. The school is said to have become so well and favorably known that pupils came from the West Indies and from nine of the thirteen colonies,²⁴ and in many cases its certificates were accepted in lieu of examination for admission to Yale. In this little brick schoolhouse the training of many illustrious men began, among whom may be mentioned Colonel John Trumbull, Governor Trumbull, Judge Simeon Baldwin, Rev. Dr. Lyman, and others. Whether Samuel Beaumont (4) took advantage of these educational opportunities we do not know.

As he was growing to manhood, the results of "taxation without representation" were making themselves felt in the colonies, and when the crisis came he and his brothers were among the first "who marched from Lebanon to the Relief of ye country in the alarm at Lexington and Concord." Samuel enlisted for a period of three years²⁵ under Captain Dan Tilden, and marched from home on Saturday, April 22, 1775.²⁶ He was afterward made corporal, and saw much active service. At the expiration of his first three years' enlistment he joined the commissioned and noncommissioned officers of Colonel Sam McClellan's regiment in a petition to the General

²¹ Vol. IX, pages, 84, 335, 344, 365; vol. X, pages 178, 259, 414, 531; vol. XII, pages 320, 331.

²² Anne born September 15, 1749; Sarah born May 31, 1751; William born March 26, 1753; Samuel born February 28, 1755; Isalah born May 23, 1757; Lydia born May 23, 1757; Oliver born May 16, 1759; Abigail born August 20, 1761; Dan born April 20, 1763.

²³ Walter G. Kingsley, for many years town clerk of Lebanon, with great care compiled various records of Lebanon and surrounding townships, including family records. His efforts represent about five hundred pages of manuscript.

²⁴ "A Historical Discourse, Norwich, Conn.—Bicentennial Celebration," by Daniel Colt Gilman, 1859, page 122.

²⁵ Lebanon sent of her sons, 106. Six enlisted for three months, 12 enlisted for nine months, and 88 enlisted for three years.

²⁶ "Collections of the Connecticut Historical Society," vol. VIII, pages 2, 3.

Assembly of Connecticut, sitting at Hartford in 1778, for higher pay. Their petition claimed:

That We Were Raised while an Act of this State was Existing, Regulating the Prices of Labor, Produce, etc., and upon the Faith and Footing of said Act and had such wages and Allowances as while Said Act continued were Just and Reasonable. But that since Said Act has been Repealed, the Prices of the Various Necessaries of Life are so enhanced as that Our Wages and Allowances are by No Means an Adequate Reward for Our Services. We, therefore, Pray Your Honors to take Our Case into your Wise Consideration and grant Such an Addition to our Wages and Allowances as Shall be adequate to the reward we expected when we Enlisted Said Service. Justice is all we Ask. Wee doubt not your Honors will Grant our Reasonable Request and Wee as in Duty Bound Shall Ever Pray. . . .

The pay that he was receiving at that time is found recorded as follows:

Dr. Colony. To Wages & Billeting, of sundry Officers and Soldiers, etc. Samuel Bemont, Corp. wages 1 £, 17 sh. o p.

At the expiration of this time he again enlisted for a period of three years in Captains Hart's and Rudd's companies.²⁷

His brother William, a member of Captain Dorrance's company, was promoted to sergeant, quartermaster, ensign, and finally to lieutenant in 1779, and was a member of "The Society of the Cincinnati."²⁸ Dan enlisted in Captain Richard's company and was wounded at Princeton. While I could find no record of Oliver's enlistment, he unquestionably served, for his name is to be found among the list of pensioners living in New York.²⁸ There is some doubt as to whether the father of these five sons served his country during the Revolution, since no definite record can be found of his enlistment, and, being 50 years of age when the war commenced, he was exempt. Whether he fought is a matter of little consequence; his courage and patriotism are clearly reflected in his five sons. After the war they returned to Lebanon,²⁹ and in due time married and established homes, Samuel (4) marrying Lucretia Abel.

²⁷ "Record of Service of Connecticut Men in the War of the Revolution," compiled by the authorization of the General Assembly, pages 229, 230.

²⁸ Statement in letter from Mrs. Lydia Brown to Mrs. Sarah Beaumont Kelm in 1892.

²⁹ William, Dan, and Oliver migrated to New York state. William was one of the first settlers of the township of Champlain in Clinton county, where he endured all the hardships incident to pioneer life. In 1804 he was made the first supervisor of the town of Moores, and owned the Shedden water privileges. He married Mary (or Polly) Wright, of Phillipstown (elsewhere called Fishkill), N. Y. Their son Samuel Beaumont was afterward intimately associated with Dr. William Beaumont at Plattsburgh in his epoch-making work.

Their father lived to the ripe old age of four score and seven, dying in 1812. His remains lie in the ancient Scoville cemetery near Lebanon, and on his tomb one may read the inscription: "William Beaumont third in descent from William Beaumont of Saybrook and fourth in maternal line from Nicholas Danforth of Cambridge, Mass. Second from Thomas Buckingham, Pastor in Saybrook, Born in Saybrook, the son of Samuel Beaumont and Abigail Denison. Died A. D. 1812, ae. 87. Sarah Everit, his wife died A. D. 1813, ae. 92." Shortly after his death "at a Court holden at Windham, Sept. 2, 1812. Samuel Beaumont is apptd. Sole Executor of the last Will and Testament," and to him is left the bulk of the estate. To the other children or their heirs he gives small sums of money, while "to his beloved son Samuel" he bequeaths all of his "land lying in Lebanon Village,"³⁰ which, as we have seen from the records, was considerable. Samuel (4) therefore became a thriving farmer³¹ and "an active politician of the proud old Jefferson School, whose highest boast was his firm support and strict adherence to the principles he advocated."³² He, too, reared a large family of children—Samuel (5), Lucretia, William (4), Lucy, Abel, Anne, Mary, John, and Abigail—and gave to them, no doubt, such opportunities as were offered by this small New England community a few years after the Revolutionary War. William, the third child, grasped a great opportunity, and, by his unselfish devotion to high scientific ideals, became an immortal character in medical annals and is the subject of our narrative.

On the opposite page is shown the lineage of the Beaumont family from William Beaumont, who came to America from England about 1635, settling eventually at Saybrook, Connecticut, to William Beaumont, the subject of this volume.

³⁰ Windham probate records (at Willimantic, Conn.), vol. VI, page 304; vol. XVI, page 147.

³¹ Lebanon land record, vol. XV, pages 305, 525; vol. XVI, page 29; vol. XVIII, page 257; vol. XIX, pages 211, 212; vol. XX, pages 86, 257.

³² Short biographic sketch supposedly by Israel Green Beaumont, son of Dr. Beaumont.

LINEAGE.

WILLIAM BEAMONT
|
m. LYDIA DANFORTH
(Cambridge, Mass.)

SAMUEL, Deborah, Abigail, Rebecca, Lydia, Mary, Sarah.

|
m. HESTER BUCKINGHAM
(Saybrook, Conn.)

SAMUEL, Anne, Hester, Deborah.

|
m. ABIGAIL DENNISON

in 1716.

WILLIAM (b. 1725), Lydia, Samuel, Abigail.

|
m. SARAH EVERETT
(Windham, Conn.)

in 1747.

Anne, Sarah, William, SAMUEL (b. 1755), Isalah and Lydia (twins), Oliver, Abigail, Dan.

|
m. LUCRETIA ABEL

Samuel, Lucretia, WILLIAM (b. 1785), Lucy, Abel, Anne, Mary, John, Abigail.

|
m. DEBORAH GREEN PLATT
(Plattsburgh, N. Y.)

in 1821.

CHAPTER II.

1785-1806.

William Beaumont, the third child of Samuel, was born November 21, 1785, just about the time the little "society" was beginning to recover from the embarrassed condition in which it found itself at the close of the Revolution. Lebanon had been a point of considerable importance during the war, for here the Council of Safety held many meetings in the old war office, the headquarters of Governor Jonathan Trumbull, and here General Washington and "Brother Jonathan" held frequent consultations concerning the affairs of the nation. Lebanon had given freely of men and money, and, like many other townships,¹ had gone into the contest with such absorbing interest as to cause her to wholly neglect her local affairs. The schools and meeting-houses had decayed, and there was no money left for the employment of teachers and ministers. There was no time either to devote to these refinements, as struggles for food and clothing and other necessities of life were claiming their entire attention.

A very fair idea of the conditions that prevailed at Lebanon during Beaumont's boyhood may still be gained by a visit, for there has been surprisingly little change in the community since those far-off days. On arriving at the miniature railway station, nothing greets the eye save the rocky hills of old Lebanon, with here and there the chimney of a farm house. A rough ride of a few miles in a cart, however, brings the traveler to the quaint old village.

The "first society" comprised five square miles, of which the meeting-house was the center from which all the distances were reckoned, and here the village proper is built about the town common, an uninteresting, uncultivated stretch of ground "thirty rods wide," at either end of which is a meeting-house, and roundabout a post office, a store or two, and a score of well-preserved clapboard houses. Among these are the old revolutionary war office; the home of Jonathan Trumbull, Connecticut's first governor; the house in which resided Hon. William Williams, a signer of the declaration of independence; the Wells Place, built in 1712, and many other old edifices which were among the earliest recollections of William

¹ Historical address by Ashbel Woodward, "History of Franklin, Conn."

Beaumont. In those days the township could boast of a population of almost four thousand,² by far the greater number of whom were farmers. The farms were necessarily small, the surface was very rocky and hilly, not especially productive, and the boundaries of the farms were marked by trees, rivulets, or crude stone walls, such as one may still see in this primitive community.

The life of the frugal New England farmer at the close of the Revolution has been graphically described by McMaster,³ furnishing an excellent idea of the life young Beaumont must have led on his father's farm until he attained his majority. At that time the Connecticut farmer plowed his land with wooden plows drawn by oxen, sowed his grain broadcast by hand, cut it with a scythe, and threshed out the grain with the old-fashioned flail. When his day's work was done he made his meal of pork and beans, salt fish, succotash, dried fruits, and Indian puddings. In the winter evenings he dozed, or read by candle light in front of the great fireplace, which, "sending half the smoke into the apartment, sent half the heat up the chimney;" his reading was confined to a small shelf of old books, or an occasional newspaper which found its way into the home, possibly "wrapped about a bundle;" his clothes were homespun, and of the sort that never wore out.

Beaumont's father was a stanch Democrat and patriot, and it was natural that his leanings should have been in the same direction. His parents were Congregationalists, but I could find no evidence in the old church records⁴ that young Beaumont ever became a member of the church. When, however, the roll of the drum announced the approaching hour of worship, he was among those who slowly wended their way over the hills on foot or on horseback to the old meeting-house; the men in powdered wigs, elaborate waistcoats, and knee breeches—the women in powder and patches, and the typical colonial dress. He was compelled to go to church with such regularity that in after years he often explained his nonattendance by the statement that as a boy he had made up for a lifetime.

There are no means of knowing how he ranked at school, though it is quite certain he was not idle. Master Tisdale, who for almost

² Today there are about 2,000 inhabitants in the township.

³ A "History of the People of the United States," by John Bach McMaster.

⁴ Record of First Congregational Church of Lebanon (in possession of the town clerk). Among the admissions I could find those of Jonathan Trumbull (1730), Sarah Beaumont (1752), Nathan Tisdale (1784), wife of Samuel Beaumont (1793), etc.

forty years had conducted the school that had made Lebanon famous in New England, died in 1787, when young Beaumont was but two years of age, and the high character of the school suffered greatly with the death of its founder and benefactor. The financial state of the community is best shown by the fact that Tisdale died in abject poverty, after having been denied by the proprietors of the school the few pounds of pension that might have relieved his pecuniary embarrassment. We have no reason for believing that after this period the school was above the average of New England common schools in general, or that Beaumont's opportunities were different from those of other lads of his day.

Practically nothing is known of his boyhood tendencies, excepting that courage and fearlessness were always predominant qualities. Even as a small boy, as the result of a banter between him and some of his playmates as to who could stand nearest a cannon that was being fired, he developed defective hearing, which as he grew older became more and more pronounced.

It seems odd indeed, considering the great care with which he preserved in writing the knowledge of all the circumstances and events of his adult life, that not a single incident of his boyhood should have been permanently recorded by him. A thorough search of the archives preserved at Lebanon failed to reveal a single fact concerning his youth, save what one could glean in a general way from the study of the history of the period during which he lived there. There are not even reminiscences current in his boyhood home that give us the least insight into that period of his life.

As he was approaching his majority, there occurred in Lebanon an incident that must have been indelibly impressed upon his mind, known as the "Meeting-house War." It seems that when Lebanon was organized as a town in 1697 it was agreed that a choice lot near the center of the township be reserved for a parsonage and meeting-house, to be "fixed and established forever," in order to prevent any trouble in future years that might come out of the growth of the village. In spite of this understanding, several attempts were made in after years to move the meeting-house to a northern point, and on several occasions the General Assembly sent committees to investigate the claims of the quarreling factions. In 1804 it was agreed to remove the house of worship to a point a mile farther north, and the tearing-down process was begun by the contractors. The sight of the demolishing of the old, sacred structure again stirred the

feelings of those opposed to its removal. Writs were obtained, workmen arrested, and finally a general struggle began between the two factions. Mingled with all this religious strife, political feuds began to manifest themselves, and the bitter political war between the old "stalwart Federalists" and the "fierce Democracy" under Jefferson's administration was carried into the camp. The "Supreme Court of Errors" was finally called upon and decided that the meeting-house should be rebuilt on its old site. Whether William Beaumont took any particular interest in these petty local strifes, we do not know, but that he began about this time to be much interested in national affairs is quite certain.

At the beginning of the nineteenth century he was a studious lad of fifteen summers. Not only had he made the best of his common school education, but newspapers and magazines, which were rapidly multiplying in New England and now numbered about three hundred, conveyed to his receptive young mind knowledge of the vast progress of the world beyond his little horizon. John Adams had just completed his administration, having narrowly averted war with France, and the Federal party, twelve years in control, was passing forever out of power. Thomas Jefferson had succeeded to the presidency, and his administration was ushered in with every evidence of the great progress that the country was making. The states were rapidly taking an important place among the nations of the world, the population had passed the five million mark, the constitution had received recognition as the supreme law of the land, and American law in general had been placed on a firm and enduring basis. Exports in the past decade had grown enormously, post offices were being established at every point, and within ten years had increased in number from seventy-five to nine hundred. Napoleon had just made himself First Consul, and was preparing to send an army to New Orleans for the purpose of establishing his authority there, but, meeting with serious objection on the part of the United States and realizing the importance of retaining her friendship, he desisted from carrying out this project. Just three years later Edward Livingston and James Monroe negotiated the purchase of the Louisiana tract of more than a million square miles. Jefferson's second administration witnessed the beginning of the aggression of England's navy on American commerce, and the seeds of the War of 1812, in which our lad was to take an important part, had already been sown.

These were some of the factors that were influencing young Beaumont's mind in the formative period, between the ages of fifteen and twenty-one. As the knowledge of the larger world came to him in his puritanical country home, there seemed to him neither incentive nor opportunity in such surroundings to add his mite to the history that was being made. Tilling of the soil and church-going were not entirely to his liking, and he became restive, awaiting only the time when he could depart from his paternal roof as his own lord and master.

CHAPTER III.

1806-1812.

Prompted by that feeling of restless ambition that seems to have pervaded his whole life, by a desire to enlarge his field of usefulness and to gain a wider knowledge of the world, he left his father's roof in the winter of 1806-7, though his father offered him a splendid farm near his own if he would remain. With an outfit consisting of a horse and cutter, a barrel of cider, and \$100 of hard-earned money,¹ he started northwardly without any particular destination, traversing the sparsely settled western part of Massachusetts and Vermont, arriving in the spring of 1807 at the little village of Champlain, in New York, only a few miles from the Canadian frontier.

Champlain was at this time a post township, beautifully situated on the Great Chazy River, a few miles from the picturesque shores of Lake Champlain, and consisted of a "post office and a handsome collection of houses, with some mills," for the Great Chazy abounded in fine mill streams and mill sites. The thousand or less inhabitants were mostly farmers, "peaceable and industrious in general," and, we are reliably informed, "the state of improvement in agriculture is comparatively respectable." The winters were long and severe, with from one to three feet of snow covering the earth for five and six months in succession, which fact, according to the "Gazetteer,"² had a very salutary effect on the morals and industry of the time and place. "The rigors of an inland climate in the latitude of 45° N. leave little time for the lassitude of idleness or dissipation, a circumstance friendly to moral virtues and to vigor of the body and mind."

Be that as it may, whether the virtue and vigor of these frontiersmen were inherent qualities or the result of their environment, both the people and the country appealed to young Beaumont, for here he ungirded his loins and began to break ground for future fame and success. Inasmuch as farming was not to his liking, it became necessary for him to seek a new vocation. He had been educated in one of the best common schools in all New England, whereas common

¹ From a short biographic sketch supposedly written by Israel Green Beaumont, son of Dr. Beaumont.

² "New York Gazetteer," by Horatio Gates Spafford, 1813, pages 69, 70.

school education in New York was still very deficient³ and much behind the New England states. It was, then, quite natural that, coming as he did from one of the fountainheads of common school learning, he should apply to the trustees for an opportunity to inculcate into the minds of their offspring some of his New England knowledge. We are informed that "he soon gained the people's confidence and was intrusted with their village school, which he conducted for about three years." Authentic information concerning his career as a schoolmaster can not be obtained, as the town records of Champlain were destroyed in 1857 and the school records in a later fire. It is not, however, difficult to imagine the life this courageous, determined young fellow led in this isolated town in the wilds of northern New York state, teaching the lads and lassies in the "little red school-house" the rudiments of reading, writing, and arithmetic.

On August 23, 1807, he wrote his father:⁴

I have the honor of informing you of my health and prosperity, with which I am blessed beyond my expectation. I continue well satisfied with this place, my employment, and encouragements. I have enjoyed a good state of health since my arrival in this town, with a sufficient supply of business. I have, by the earnest solicitations of the people, commenced on the third quarter in the school, on terms as usual. I have been for three months past employed (while out of school) in the store, for which I am amply rewarded. The rumor of war is very alarming to this Northern people, as it appears almost inevitable. From the various outrages committed on the American vessels by the British, and other repeated insults which we are weekly experiencing, carry an appearance of immediate war. The British forces at the North appear to be actually preparing for an engagement.

A gentleman of this place, recently from Montreal, brings information that twelve thousand men have arrived at Quebec, and that two regiments of twelve hundred each have arrived at Montreal, and that the men in Montreal are voluntarily forming themselves into companies. But it is the general opinion that, in case war should ensue, no attempt at defending the province of Canada would be made, except at Quebec, where undoubtedly a vigorous and determined stand would be made. We are informed that the military are extremely busy in the moving of cannon, etc., from St. Johns, which we understand are to be sent down to Quebec with all possible speed. A spirit of patriotism prevails in this vicinity. We are voluntarily forming ourselves into companies and preparing a state of

³ New York state in 1813 had an accumulating fund of about \$500,000, with an annual revenue of but \$36,000 for purposes of education, "a most liberal provision, and it is devotedly to be wished that the method of its application may be worthy the enlightened policy of the appropriation." (*New York Gazetteer*.)

⁴ Original letter in possession of Mrs. Lydia Brown, of Hartford, Conn.

defence. We have made application to the governor of the state to have a sufficient supply of arms and ammunition sent on to this place. It is very probable, if war ensues, that a garrison will be immediately stationed in this place, as here will be the first inroad of the British.

I am informed from a statement in the *Albany Crisis* of August 5 that on Monday, 27th ult., there arrived at Norwich (Conn.) the mate and three people belonging to the Schooner Betsey, Capt. Cary, which left that place a few weeks since on a fishing voyage. They state that several days after their departure they fell in with a British cutter mounting 8 twelve-pounders and 14 swivels, who, after firing upon them, boarded, armed with pistols and cutlasses, abused them and ransacked the lading, cutting their codfish lines in pieces. To conclude the whole, they ordered all the crew, except the captain, on board the cutter, detained them 24 hours without anything to eat or drink, and rendered the Betsey completely unfit for her intended voyage. I am extremely anxious to know whether there were any old Lebanon boys that sailed on board that schooner; if there were, I wish you to inform me of them, and also of the captain, for I fancy it might be Capt. Roger Cary, brother to Mr. John Cary, of Windham.

In this letter he also expressed his intention of returning to Connecticut for a visit as soon as an opportunity presented itself. The visit was evidently paid about a year later, for on October 2, 1808, he wrote his "honored parents" as follows:

After an agreeable journey of ten days' pleasant weather (excepting two or three days), I have arrived at Champlain in good health. . . . I am cordially received and welcomed home by all, and shall recommence school tomorrow, to the joy and satisfaction of the people. . . . I find on my arrival a regular [force] consisting of thirty men stationed in this village in Continental order, and am informed that additional troops are daily sent on. The smuggling trade has increased during my absence, and continues yet. There are two gunboats about completed in Burlington, and ten or twenty sailors, obtained from New York, to manage them on the lake to prevent smuggling. I shall omit particulars for the present, for I have not been in town long enough to gain correct information respecting news.

That he was a serious-minded young man is thoroughly evidenced by a letter which he sent his brother Abel in the following year, 1809:⁵

You are now on a critical state of life—errors and improprieties will beset you on every side in spite of your precautionary efforts to evade them. The strongest and most effectual barrier against these deviations is to cultivate your mind and procure a stock of familiar ideas and useful information. Think not too much of dancing scenes, but give your mind

⁵ Abel was at this time 18 years of age. He afterward attended medical lectures in the city of New York, and was practicing there when he died.

time to reflect on what you are and of what use you may be to yourself and to society by properly improving your time. Be not neglectful of any opportunity to qualify yourself for public use. Get all the scholastic information that your circumstances will allow. Public transaction, in this critical period, will eventually excite your observation; be therefore careful to infer correct ideas. Let reflection go before passion, reason before judgment. Finally, my brother, qualify yourself as far as is in your province in all the branches of a common and useful education, and you will discover vacancies enough in this short scene of life in which you may advantageously place yourself. Make a judicious choice in your friends, companions, and the primary object of your pursuits. Let virtue, truth, and honor be your planetary guides; temperance, justice, fortitude, and prudence your cardinal points; faith, hope, and charity your horizon; philanthropy, benevolence, friendship, and philosophy your atmosphere; and the elements of life will be smooth, transparent, and pleasant, gently gliding over your waving imagination like the eastern morning breeze across the swelling field of wheat.

While teaching school and tending store he evidently found sufficient time for the reading of medical works, which he obtained from the library of Dr. Pomeroy, a prominent physician and surgeon in Burlington, with whom he doubtless came in contact as he was wending his way northward through western Vermont. He evidently determined at that time to take up the study of medicine, and borrowed from Dr. Pomeroy such works as would give him the fundamentals. Teaching, then, was only a means to an end, his real object being to put aside sufficient funds to tide him over the prescribed two years of medical apprenticeship.

At this period there was evidently no physician in Champlain whom he considered worthy of being his preceptor, so at the end of three years, in the fall of 1810, he crossed Lake Champlain to St. Albans, Vermont, where Dr. Benjamin Chandler was the most prominent and capable practitioner. To him young Beaumont applied, and was taken into his own home as an apprentice and a fellow pupil of his son, John, who was reading medicine with his father. That he chose wisely there can be no doubt, for there is every evidence that Dr. Chandler instilled into the mind of his young pupil from the very start the importance of developing his memory, his powers of observation, and the habit of logical thought. While Beaumont was by nature gifted with these qualities, it is very evident that they were encouraged and developed through his apprenticeship with Chandler.

There are practically no records extant of Chandler's medical

qualifications other than the statement that he was "most skillful in his medical practice and notably in surgery." But if a tree may be judged by its fruit, certainly a fair estimate of his talents may be formed from the evidence that we find among the Beaumont papers of the great incentive and inspiration which he lent his pupil. If he ever wrote anything, medical annals and the records in possession of his descendants fail to reveal it, but this was true of most of the country practitioners of that day, because of their lack of opportunity of recording their observations. Medical journals were few,⁶ were edited only in cities, and their contents were confined largely to the experience of those most accessible to the editors. The only facts that we have been able to collect concerning Dr. Chandler were those that his granddaughter⁷ kindly furnished. She writes:

I heard my father speak many times of Dr. Beaumont, who was studying with Dr. Benjamin Chandler at the same time with himself. Naturally my father followed the record of Dr. Beaumont's life career with great interest. The death of my grandfather occurred many years before my birth; therefore I can not now give you any proper description of him. I have in my possession two copies of letters from Dr. Beaumont to my grandfather, and I presume you will be pleased to have them, since at this very late date there can be no wrong or impropriety in my giving them into your hands. . . . There is no portrait of Dr. Benjamin Chandler, though I have a sketch of his later days written by my father relating especially to his religious experience.

He was born in 1772 or 1773, a few years prior to the Revolution, and died in December, 1818, at 46 years of age. The sketch referred to deals almost entirely with his religious experience during the last few months of his life and his efforts to regain health.

He was the victim of severe and unceasing bodily pain, also suffering intense mental distress, filled with disgust toward all the world calls good, finding nothing to satisfy his eager and ever active mind. Always sustaining a character for integrity, honor, and generosity, he was nevertheless irascible and sometimes implacable. He was a man to be much admired and loved, yet sometimes to be feared and condemned. Such was his apparent character when he left St. Albans for the last time in his life for a short sojourn at the medicinal springs of Saratoga.

Yet in a few short weeks he returned to his family and friends unim-

⁶ Between 1797 and 1812 ten medical journals had been in existence in America, five of which were discontinued.

⁷ Mrs. Caroline E. Bishop, of Dorchester, Mass., the daughter of Dr. John F. Chandler, who became a prominent physician in St. Albans, succeeding his father in practice and living to the age of 90 years.

proved in health, still suffering intense bodily anguish, but with a mind at peace with God and in charity with all mankind. All the tiger was transformed to the lamb.

The remainder of the sketch is devoted to a consideration of the religious light which came to him during his last days. These facts at least serve to give a faint conception of the "manner of man" who guided young Beaumont in the very inception of his medical career.⁸

Living under the same roof, as was customary in the days of medical apprenticeship, the preceptor could look after both mind and morals of his pupil. The fledgling, in return for the instruction received at the hands of his master, not only compensated him for his trouble, but performed many of the menial offices of a servant about the house and the office. It was he who prepared the powders, mixed concoctions, made the pills, swept the office, kept the bottles clean, assisted in operations, and often through main force supplied the place of the anesthetic of today in the amputation of limbs and other surgical procedures. He rode about with the Doctor from house to house, profiting by his personal experience and jotting down in the pages of his notebook and on the tablets of his memory the words of wisdom that fell from his master's lips. His instruction was chiefly through the observation of cases, rather than through reading. He was taught the symptoms of disease, the crude methods of diagnosis, the art of prescription writing, and the process of cupping and bleeding considered so effective in its day. When occasion permitted, he read the medical works contained in the old mahogany bookcase in

⁸The following is a fragment of an "Ode to a Clock," written by Dr. Benjamin Chandler during his last sickness in 1818:

Yes, faithful monitor of passing time,
Thou givest the alarm of morn. of eve, and the
Still midnight hour, when contemplation fills
The reflecting mind; undeviating in thy course
Thou grind'st unerring in the useful task
Of daily labor, and the journeyed sports,
The evening gambols, and the hours of rest,
Each second, minute, and each day and month
Is by thy face exhibited to view;
The silver moon in all her various forms
Is shown in infancy, in youth, in age,
By thy mysterious powers. Thy form is beautiful,
Thy voice distinct, shrill, and impressive.
But when old Time, which thus thou hast portrayed,
Has worn thy wheels, thy symmetry defaced,
Or some foul accident has wrecked thee to the center,
And put a period to thy mystic powers,
Then will thy fame be blotted out, nor more continued.
Respect not shown for thy past merit, then will
Thy precious corse be kicked aside and trampled on
By those thou hast befriended. . . .

the corner. They were not many, for medical libraries were very small in those days because of the price of books of that character, and he was accounted fortunate indeed who could boast of a "five-foot shelf" of medical books. Occasionally a rare opportunity of dissecting an arm or a leg that had been amputated presented itself, and these were gala days for the young pupil. The dissection of an entire body was exceedingly rare, not only because of the difficulty of obtaining cadavers, but because of the lack of means for preserving them.

Of all of the valuable papers at our disposal in the preparation of this work, none is more interesting from an historical standpoint than the small notebook kept by young Beaumont during and just after his apprenticeship. It contained some of his first lessons in prescription writing and the smattering of Latin necessary in writing them, and notations on the causes, symptoms, and regimen of the more important diseases with which he came in contact in the community in which he was receiving his instruction. "Intermittents, acute fevers, spotted fever, pleurisy, peripneumony, rheumatism, and cynanche" were all receiving his earnest consideration. Many of these notes were doubtless dictated by his preceptor and preserved as a textbook by the pupil, while others were copied from old masters, such as Cullen and Sydenham. He included also many quotations from the classics, which show plainly the trend of his thoughts, his high ideals, and his devotion to the science of medicine. But nothing could have so well foreshadowed the coming events in his life as the case histories contained in this little volume of patients observed by him in the company of Chandler. They serve to demonstrate very conclusively that the power of keen observation and the true scientific spirit were manifest in him at an early age of his career, that the nucleus was there, and all that it required was proper encouragement. Let us note here a few of the quotations which he considered worthy of copying and appropriating:

∨ We know not what may be the idea of the best physicians in future time, but he is reckoned a good physician who makes use of all the assistance by which, thro the happiness of the present age, the art of physic has been improved.

Of all the lessons which a young man entering upon the profession of medicine needs to learn, this is, perhaps, the first—that he should resist the fascinations of doctrine and hypotheses till he have won the privilege of such studies by honest labor and a faithful pursuit of real and useful

~~Prescription~~
 Im Gamboz. 3p
 Im Aloes 3p
 Im Scammon 3p
 Saps castel. 3p 34
 Ant. Panacea 3p
 Bals. Capivi. 9. S. M. F. S. S. O.
 Chandler

Equal parts. Boov. Saps. castel
 Del Bois. Saps. castel. with Bals. Capivi
 Corrector Digestion 9. S. M. F. S. S. O.
 Chandler

Two parts. Im. Spi
 Three parts. Sucas
 Five parts. Saps. castel.
 Bals. Capivi. 9. S. M. F. S. S. O.
 Sawell

Equal parts. Rhin. Scammon. & Bals.
 as much Q. R. Sugar as is equal to the whole
 reduced to fine powder. Capivi in water
 of 3p. once in 2 or 3 days

An exercise in prescription writing from Beaumont's notebook while an apprentice under Dr. Chandler, 1810-12.

knowledge. Of this knowledge surely anatomy forms the first and greatest share as being the basis of all medical skill.

Physicians, when tending upon their patients, should make their health their first object. So gentle and sympathizing should be their dispositions and manner in the apartment of the sick that pain and distress should seem suspended in their presence. So exhilarating ought their visits to be that hope should follow their footsteps, so salutary their prescriptions that death should drop his commission in combat with their skill.

In order to attain this useful knowledge, we must learn what is necessary from anatomy, waste no time in superfluous study in it, dissect subjects, distinguish remaining effects from causes that have passed away; examine diligently very many bodies of persons who have been hanged, drowned, died of wounds, etc.; compare these diligently with bodies of those who have died by lingering and often-repeated disease; compare every particular with the whole; guard against the rashness of forming opinions, and, if you can, you will be among a very few who have ever been able to do so; never expect to discover the cause of disease in dead bodies; be circumspect in forming a judgment.

In order to be convinced that he very early put these precepts into practice, one needs but peruse some of the case records, showing how as a pupil he was carefully making and just as carefully recording his observations. The following case records, selected from a number in his notebook, show not only his scientific tendency, but other traits of character as well, though according to our present conception a few unnecessary observations have crept into the record:

Miss M. A. was taken on the 12th of August, 1811, with the common autumnal fever; the symptoms very favorable, and its progress mild without the least apprehension of danger till the eighth day (being excessively hot and sweltering), just at night, when she was discovered by her physician to have fallen into a state of extreme debility and fast sinking, as if under a powerful internal hemorrhagy, and, notwithstanding every medicine that was administered for her relief, not a momentary effect could be procur'd. She continued to fail faster and faster for about two hours, when, to the heartfelt grief and inexpressible sorrow of her tender mother and affectionate brothers, she expired, amidst the groans and lamentations of her sympathetic companions and congenial friends and associates, deluged in tears of grief for the loss of so amiable a daughter, sister, friend, and companion.

The body was immediately opened, where was found in a fluid form the omentum, almost completely dissolved, about two or three ounces remaining. . . . A quart or more of Oil found in the cavity of the Abdomen and a quantity of blood in the first passage, probably an hemorrhagy from the hemorrhoidal vessels, and (detached from the cause or

effect of the present disease) the ovaria were enlarged to more than three times their natural size, filled both externally and internally with Hydatids, and many of them in a state of actual suppuration, which last circumstance would unavoidably have circumscribed the number of her days to a very contracted period.

The autopsy, which was never neglected by him, is of special interest, and gives one the impression of a possible case of pancreatitis, with fat necrosis and dermoid cysts of the ovaries.

April 22, 1812, M. M., daughter of I. M., had been for many months very much out of health, feeble, and complaining of much pain and distress. She not being old enough to tell the nature or exact seat of her complaint, her parents suppos'd her to be troubled with worms, and accordingly gave her vermifuge medicine, without the desired effect. She still continued ailing, and from the history of her parents she appear'd singular at times by seeming to be troubled with the presence of some hateful, undesirable object at which she would strike and contend with, tho nothing was there; quarreling with the children; seeming petulant and feverish, and complaining of her head more particularly. On or about the 12th instant she was violently attacked with a pulmonic inflammation, which continued obstinate, with a pale, sunken countenance, cold extremities, occasional flushings of fever and burning heat, frequent stoppage of circulation, nausea, vomiting, and universal dryness of skin, until about the tenth day of the disease, when she was taken (as the people supposed) with a fit—that is, an affection of the nerves, a twitching of the muscles, a wild, staring delirium, dilatation of the pupils, continual picking with the fingers at nothing, making a kind of whispering noise and crying, complaining of great heat and pain in the head, and a continual nausea and sickness. Tho there was but a forlorn hope of recovery, it was proposed she be put into the cold bath, which seemed to give short relief from the violent symptoms, but they soon returned, and, notwithstanding a repetition of the bath to no effect, she died in about eight hours after the first emersion at 2 o'clock, a. m.

The symptoms of the hydrocephalus internus having been so obvious, *it was considered to be productive of future benefit to open the head.* Leave being obtained, it was accordingly done on the same day at about 1 o'clock, p. m., where we found about a half pint of serous fluid contained in the ventricles, diffused thro the substance of the brain, the blood vessels all distended with thick black blood, the whole substance of the brain of a rather watery appearance, and the dura mater firmly adhering to the skull all around, as well as the sutures, and bore evident marks of an inflammation of the membranes of the brain.

A. M., a healthy young lady of full, plethoric habit (though not of a very strong constitution), was on the 17th of August seized with a synocha or inflammatory fever; symptoms violent, and weather extremely warm and sultry. For several days previous to this attack she had been quite unwell, but kept about her usual domestic employment, taking heavy

doses of laudanum to relieve the pain, till about 10 o'clock on the 17th she was taken with violent pains in her head, side, back, loins, muscles, and limbs; cold chills, rigors, universal lassitude, and nausea; face red as scarlet, eyes inflamed, and great soreness on motion, tongue thick coated and very black, skin dry; and pulse strong, full, and hard. I was called about 11 o'clock, immediately took about 14 ounces blood, gave an emetic, cum pill cathartic, which evacuated much foul, black bilious matter from the stomach and from the bowels; besides, a spontaneous bleeding from the orifice in the arm of about 12 oz. as near as could be judged, which reduced the high arterial action and much abated the other violent symptoms, and with the assistance of the saline draught induced a free perspiration and pretty much relieved the pains; continued the saline draught with the addition of the Dover's powders thro the night, which afforded a pretty comfortable night's rest and kept up a general action in the system, tho there was some prostration of strength and slight pains and dizziness of the head thro the fore part of the following day, with a slight paroxysm of fever about 11. In the after part of the day the pain in her head was increased with the recurrence of some of the other symptoms, and I judged further evacuation from the bowels to be necessary, and accordingly promoted it by cal. and Ol. Ricin, which, after a pretty severe operation, left her considerably exhausted, notwithstanding a free use of the pulv. Doveri and serpt. virg. the next morning, after a night of considerable pain and distress in consequence of the continuation of the alterant pills kept up during the operation of the physic. Relieved in the morning by an oplate, she continued better thro the day; took Ol. Ricin at night, which, after operating, left her in the same condition as before, griping in consequence of the pill. alterans, and relieved in the same way, tho much affected with dyspnoea and faintness. Saturday morning, bark wine, Serpentaria, and Brunonian pill continued to be administered with a liberal hand; broth and friction given freely; yet, notwithstanding all these, she continued to have faint turns, with cold extremities, with considerable sinking of the pulses thro the day, which may be ascribed partly, perhaps, to the shock given her by the bells tolling for the death of a child in the neighborhood. At night directed the stimula to be increased, added colombo to the Serpt. Rested very well thro the night; much better this morning; strength sufficient to raise herself up, sits up considerably, quite free from pain; takes nourishment with a good relish, action much better, capillaries free, passages regular, some trouble with dyspnoea, but on the whole must be considered in the convalescence state. . . .

Mrs. Polly, wife of Mr. C. H., of a slender constitution and cold, phlegmatic habit; married in May, 1810; was happily delivered of a fine, large, healthy boy on the 15th of February, 1811; remained very comfortable for four or five hours, had a refreshing sleep, and awoke free from pain or disagreeable sensation. But in the course of half an hour complained of a pain at the pit of the stomach, which she supposed to be merely flatus, and took a small dose of Elix. Pereg. and Ess. plp. menth. without any

essential relief; a violent retching and puking ensued, rejection of monstrous, fetid, black, bilious matter by spontaneous effort, without any relief. In an hour after the commencement of the distress, judging from the matter rejected that an emetic of ipecac and Sulph. iron indicated, I gave a gentle one, which had a kind operation and seemed to give momentary relief, but no permanent effect, although it evacuated much foul, bilious matter; yet in a short time she relapsed into the same condition, and was most violently seized with spasms of the most alarming nature, which left her in the space of a minute deprived of her reason or recollection. These spasms recurred at irregular intervals for about seventy-two hours, but with the same invariable symptoms. The first appearance of a recurrence was an apparent revival of strength and diminution of pain, tho the eyelids would seem to rise involuntarily, the eyes moderately moving with more than common luster for a few seconds; then a frequent winking, with the eyes moving to the left; the muscles of the mouth and face beginning to twitch, drawing mostly to the left; a horrid distortion of the whole features, terminating in a general and violent convulsion, followed by great difficulty of respiration and sense of suffocation, ending in a great prostration of strength, turgescence of the countenance, and frothing at the mouth, leaving the patient in a comatose state until the recurrence of a succeeding fit, which at first occurred one in about fifteen minutes, afterward not so often, sometimes leaving an interval of two or three hours and then returning with more violence, and so continued until relief could be obtained from the operation of medicine, which was not under forty-eight hours.

The most powerful antispasmodics were liberally administered in vain; no relief could be observed, not even in arresting the spasm by large doses of opium, castor oil, etc.; the warm bath and friction and injections were all useless in preventing or even relieving the convulsions for thirty-six hours, when by the administration and operation of about 8 grains of cal. to 3 grains of musk every two hours, blisters on the extremities, a large one on the abdomen, the use of stimulating injections, a copious discharge of a most fetid bilious matter from her bowels gave the first signs of rescuing her from death. Forty hours after the attack she experienced the first relief from the operation of the above-mentioned treatment, and continued to be relieved by the use of the cal. musk in smaller portions, with the addition of camphor and ipecac repeated every four hours, keeping up a discharge from her bowels daily by the use of ol. ricin, salts, senna, manna, mag. alb., alternated with yeast or broth, giving for nourishment arrowroot, with small quantities of wine, chicken broth, etc. Under the foregoing treatment she recovered rapidly, and in the space of four weeks was able to ride a mile or two, and in five or six commenced her domestic duties again.

N. B. One thing merits noticing in this case in particular—that is, she lost all recollection and sense of reason from the first fit, and, what is still more singular, when she began to regain her reason, could not recollect any, not even the most important, circumstances of her life for

more than a year last past, and as she slowly regained her strength and reason she came gradually to her recollection, recognizing faintly the most distant and important event subsequent to her being married, and so she continues to recover her recollection in the same ratio as she regains her health and strength, and acting as it were the scene of the last year of her life over again.

Thus he plodded through the prescribed two years of his apprenticeship, improving each hour, reading the masters, dissecting an arm when the opportunity offered, never missing an occasion to perform a post-mortem, making careful notations, preserving his case records, and profiting by every experience of his preceptor. A letter to his parents, written November 26, 1811, gives expression to the great satisfaction he was deriving from his apprenticeship at St. Albans:

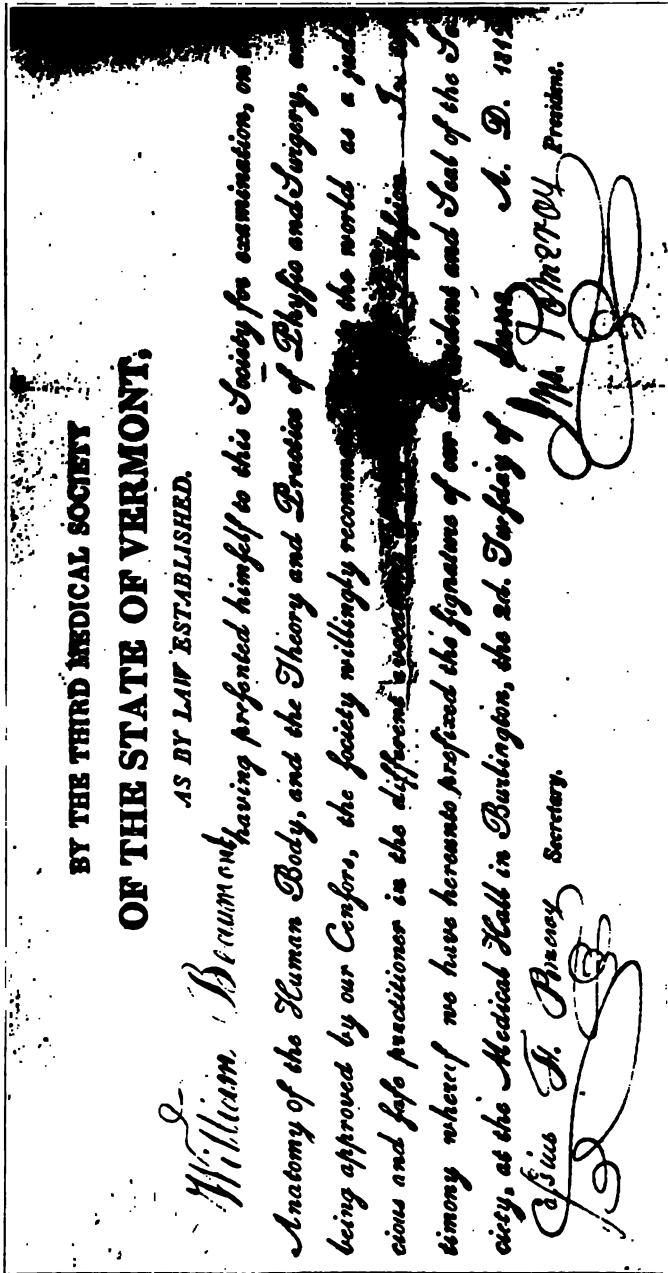
My dear Parents, Who at this time, and for some time gone, have been affectionately upbraiding their undutiful son for neglecting to comply with their most anxious and reasonable solicitations, but will kindly pardon a breach of duty which arises not from a want of natural feeling or grateful remembrance; but, buried among books and absorbed by thought and reflection, I am indifferent to almost every other topic, even to those endearing themes—paternal love, maternal affection, and fraternal esteem—which demand the first, the last, and the dearest sentiments of my heart.

I enjoy two of the best gifts of heaven—health and peace. The wealthiest can enjoy but one more, which is competence, yet many, very many frowns and misfortunes borne by them are by me unexperienced.

My situation affords me a very pleasant life, though it requires my utmost diligence and perseverance in the pursuit of a medical profession by which, sooner or later, I hope to exhibit specimens of proficiency in an art which, in this enlightened age of reason and under the modern improvements of Chemistry and Physiology, bids fair to rise with healing on her wings.

My local situation is such that you need not give yourself uneasiness about it. I shall be able to meet the exigencies of my education without any difficulty (extraordinaries excepted); my prospects are fair, and my encouragements are by no means indifferent. I am considerably in the habit of riding with my preceptor, and have the charge of many of his patients during his calls elsewhere, which are numerous and at a distance. He has just returned from a distant patient in whom he has, as it were, effected a resurrection, and is now gone twenty or thirty miles to perform an amputation.

Report was evidently current back in his New England home that he had turned Federalist. In this same letter he showed the



Beaumont's license to practice medicine, granted by the Third Medical Society of the State of Vermont on the second Tuesday of June, 1812.

fallacy of this report, and at the same time gave expression in unmistakable terms of his firm adherence to Republicanism.

. . . As to the report that I have become a Federalist, I will mention that so different is the impression among these people, and even on the mind of my preceptor, who is the hottest Federalist that I ever knew, though a man of superior talents, that I am toasted as a Republican, and am under daily threatenings of being turned out of door for cherishing a true Republican principle. That principle is the legitimate sentiment of every real American. It was hereditarily bestowed and carefully cultivated by an anxious father, whose precepts and instructions have made an indelible impression on the heart of his son, who is farther than ever from having the name Federal justly applied to his character or associated with his name—farther than the North is from the South; who feels the glowing influence of that noble sentiment of liberty and independence which the veteran fathers fought, bled, and died to obtain, which influence elevates the soul of every true American as much above the factious spirit prevalent in our country as Zenith is above Nadir, or virtue above vice. Yes, dear Sir, erase and let every impression be obliterated from every mind of my ever being made a convert to the present system of Federalism. Sooner might they remove the everlasting hills than bribe my integrity, make my faith waver, shake my belief, or divert my course from the pole star of Republicanism while reason holds her empire over the province of my intellect.

With the completion of his apprenticeship, the "Third Medical Society of the State of Vermont, as by law established," granted him a license to practice, with the announcement that

William Beaumont having presented himself to this Society for examination on the Anatomy of the Human Body, and the Theory and Practice of Physic and Surgery, and, being approved by our Censors, the Society willingly recommend him to the world as a judicious and safe practitioner in the different avocations of the Medical Profession. In testimony whereof we have hereunto fixed the Signature of our President and Seal of Society, at the Medical Hall in Burlington, the 2d Tuesday of June, A. D. 1812.

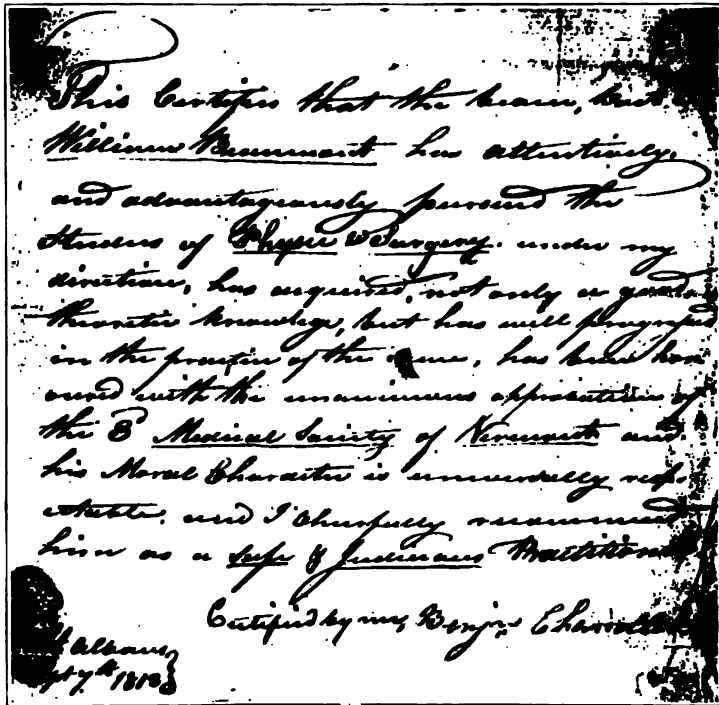
JNO. POMEROY,⁹ President.

CASSIUS F. POMEROY,¹⁰ Secretary.

⁹ Dr. John Pomeroy moved to Burlington in 1792, where he lived in a log cabin with his wife and three children, and in 1797 built the first brick house on Water street, which is still standing. He practiced medicine for nearly fifty years, during part of which time he is said to have been the most prominent physician and the only surgeon in northern Vermont.

¹⁰ Dr. Cassius Francis Pomeroy, the eldest son of Dr. John Pomeroy, was admitted January 15, 1802, to the University of Vermont, receiving the degree of Bachelor of Arts in 1806 and that of Master of Arts in 1809. He was one of the original members of the Phi-Sigma-Nu Fraternity. He died March 23, 1813, of the prevailing epidemic, "peripneumonia notha," and on April 29, 1813, a discourse was pronounced in the chapel of the University on his death by Daniel Clark Sanders, D. D., president of the University. (American Biographies of Prominent Men; Hemmenway's "Vermont Gazetteer;" Raun's History of Chittenden County.)

The Pomeroy's whose signatures are affixed to his license seem to have played an important role in Beaumont's early development, for we have elsewhere noted that, even before taking up the study of medicine as an apprentice, he was reading works from the library of Dr. Pomeroy. Dr. John Pomeroy, concerning whom traditions are still current in Burlington, was one of the most prominent and influential pioneers of this section, for many years a member of



Certificate of professional attainments and moral character from Dr. Benjamin Chandler to Beaumont on the completion of his apprenticeship, September 7, 1812.

the corporation of the University of Vermont, which opened its doors in 1801, and afterward professor of anatomy and surgery in its medical department, which was fully organized in 1821. He began his lectures on these subjects, however, in 1807, and taught students at his own office from 1809, when so many are said to have applied that he was compelled to rent a lecture-room outside of his

own house. It is quite probable that Beaumont's contact with Dr. Pomeroy as he passed through Burlington in the fall of 1806 determined his life career.

After receiving this authorization permitting him to engage in the practice of medicine, Dr. Beaumont remained with his preceptor until September 8th of the same year. On his departure the master gave him a certificate bearing testimony that "the bearer, Doct. William Beaumont, has attentively and advantageously pursued the Studies of Physic and Surgery under my direction, has acquired not only a good theoretic knowledge, but has well progressed in the practice of the same, has been honored with the unanimous approbation of the 3d Medical Society of Vermont, and his Moral Character is universally respectable, and I cheerfully recommend him as a safe and Judicious Practitioner." He took with him also other credentials, which give a fair idea of his high standing in the community. Dr. Truman Powell,¹¹ whom Beaumont evidently regarded well, for we find a number of his prescriptions copied in the little ledger, on September 10, 1812, executed a certificate at Bennington stating that

The Bearer, Doctr. William Beaumont, is a Gentleman of respectability and talents, and one who has regularly Studied Physic as a Science and Practiced it as a Profession. I therefore recommend him to the World as a safe and Successful Practitioner in Physic and Surgery.

A testimonial, signed by Seth Pomeroy¹² and given at Burlington September, 1812, reads as follows:

The Bearer of this is Dr. Wm. Beaumont, a young Gentleman with whom I have been personally acquainted for several years past, and I consider him a Man of the strictest Moral honesty and Integrity. As a Physician and Surgeon I think him fully Intitled to the Confidence and patronage of the public in general. I am also acquainted with the Character of the several gentlemen under whose Care and Inspection he Received his

¹¹Dr. Truman Powell practiced in Burlington contemporaneously with Dr. John Pomeroy. He was born in 1776 and died in 1841. He was a man "of large stature, powerful physique, and great energy of character."

¹²There were two Seth Pomeroy's living in Vermont about this period, one of whom was a doctor, who died in New Salem, Mass., on March 18, 1821, and the other was a brother of Dr. John Pomeroy. The latter lived at Burlington for a time and later located in St. Albans. He was a merchant, town clerk, postmaster, and a member of the General Assembly from 1800 to 1805. There is nothing to indicate that this certificate was written by a physician, so the probabilities are that it was by Seth Pomeroy, layman and fellow-townsmen. I lay stress on this point because it has been stated that, while teaching school at Champlain, Beaumont read books from the library of Dr. Seth Pomeroy. This is evidently an error, which easily crept in because of the number of Pomeroy's here mentioned. As stated above, these books were doubtless obtained from Dr. John Pomeroy. (For information concerning the Pomeroy's I am indebted to Mr. A. A. Pomeroy, secretary of the Pomeroy Association, Sandusky, Ohio, and Dr. J. B. Wheeler, Burlington, Vt.)

Education, and from their known Integrity and high standing in their professional Character I am fully Sensible they would would not sanction any one that Was not Duly qualified.

The Champlain Chapter of the Royal Arch Masons, of which Benjamin Chandler was high priest, also bore testimony to their companions with whom his lot might be cast in the future. that

The bearer, our trusty and worthy Companion William Beaumont, has, at our chapter at St. Albans, known by the name of Champlain Chapter, regularly passed the Ch——, been duly marked accepted and received as most excellent Master and exalted to the Sublime degree of Royal Arch Mason, and as such we recommend him to the Friendly notice and esteem of our worthy companions. The Unspotted Character and the purity of his morals demand of us an acknowledgement, That it is with reluctance that we Consent to his leaving our Masonic Society, he having served as Scribe.

Thus he left the home where he had gained many friends, whose good will and good wishes unanimously attended him into the fields of his future usefulness. But how little did they, and how little did he, realize the vastness of the field that would unfold itself for his development.

There was a matter connected with his association with the Chandlers which, after the lapse of a full century, may properly be mentioned here. Mary Chandler, though very young, became the object of young Beaumont's avowed attachment, which seemed most ardent and devoted. For reasons unknown, possibly political, her father withheld his approval, though he gave every evidence of being fond and proud of his pupil. This affair seems to have ultimately resulted in strained relations between pupil and master. Mary died about four years later, and it is said that the young suitor, after having left St. Albans, made a brief visit unknown to friends, visiting Mary's grave and leaving some words roughly carved on the top edge of the slate stone slab. At any rate, my informant was able to read fifty years later the two words, "My Mary," with faint marks of words erased. He left the Chandler home broken-hearted, but courageous, full of confidence in his ability to succeed and eager to meet the serious problems of life ahead of him.

In June of this year the war clouds that had been gathering for several years came to a focus, and resulted in a declaration of war with England. Already several important engagements had oc-

To all worthy Brethren in Royal Arch
 Masons throughout the Globe. —

The below, our Trusty and worthy
 Companion William Beaumont
 has, at our Chapter at St Albans, ^{Mass.}
 known by the name of Champlain
Chapter, regularly passed the Obi
 and duly Master, accepted and
 received as most Excellent Master and
 Exalted to the sublime degree of Royal
 Arch Mason, and as such we re-
 commend him to the friendly notice
 and esteem of all worthy Companions.

The unspotted character and purity
 of his Morals demand of us, an
 Acknowledgment that it is with
 reluctance that we consent to his
 leaving our Masonic Society. We
 having regularly passed as our
 name at St Albans ^{Benjamin Chandler H. Priest}
 September 8th 1812. ^{Abner Mortimer}
^{Frederick Thayer H.}
^{John Mason R. D. C.}

Certificate of good character from the Champlain Chapter of Masons, executed at St. Albans on September 8, 1812, and signed by Benjamin Chandler as high priest of the lodge.

curred, in which the Americans had proven partially victorious. Here young Beaumont saw his opportunity, not only to display patriotism and to put into immediate practice the theory of medicine and surgery which he had imbibed in the village of St. Albans, but also a chance to earn money, of which he was sorely in need. He crossed Lake Champlain to Plattsburgh, where a portion of the Army of the North under General Dearborn was encamped, presented his credentials to the proper authorities, and on September 13th was promptly received into the army as surgeon's mate¹³ in the "Sixth Regiment Infantry on brevet from General Bloomfield." His commission was issued by President Madison on December 2, 1812, and he was transferred to the Sixteenth Infantry on December 12th. During this particular period there had been very little activity on the part of this division of the army, so that on January 1, 1813, he suspended duty for a time and began the private practice of medicine in Plattsburgh. In the meantime he took occasion to visit his friends, the Chandlers, at St. Albans, when his preceptor seems to have expressed serious objections to his reëntering the army and endeavored to dissuade him from returning to the service. The temptation was, however, too great, and, with the return of activity and the prospects of an engagement with the enemy, he returned to the army and was transferred again on February 15th to the Sixth Regiment. A few weeks later orders were issued to that division of the army to march to Sacketts Harbor to embark for a point unknown. Just prior to leaving Plattsburgh he wrote the following letter,¹⁴ describing his movements, expressing the high regard and esteem in which he held his preceptor, but at the same time revealing clearly the differences, political and social, that existed between them:

CAMP SARANAC, PLATTSBURGH, March 10, 1813.

Doctor B. Chandler, St. Albans.

DEAR SIR: I beg pardon for not writing before, but my weekly expectation of seeing you here was the reason of the "crime of omission." I had given up the idea of seeing you here, and anticipated coming to St. Albans on Tuesday next with a number of candidates for the R. A. Degree, but in this am disappointed. We have this day received orders to repair to Sacketts Harbor with all possible dispatch. We start on Saturday next, expecting to join 8,000 at that place, where doubtless we shall have an obstinate battle.

¹³ Surgeon's mate was practically the same as assistant surgeon.

¹⁴ This and the succeeding letter are in possession of Mrs. Bishop. They are given with but few unimportant omissions.

Pardon me tho' for not first informing you that I had altered my calculation since I saw you. It was then to continue in private practice in this place, with the hopes of your patronage and protection, but I am again in U. S. Service. I have not time to state particular reasons, but honor and gratitude to the officers for the friendly assistance in procuring the appointment, together with their anxious solicitude for me to continue with them, was one cause of my resuming my former station. Could I but see you I would satisfy you of the propriety of the resolution, but that I don't expect at present, perhaps never. Be that as it may, my expiring breath will be an invocation for your prosperity, my last expression gratitude for your generous friendship and benevolent kindness, and my eternal sentiment, unfeigned friendship, respectful esteem, sincere affection, and cautious love for you and yours. . . .

Therefore I go to meet the whistling messengers of Death, encountering winter's inclement blasts, toil, fatigue, and painful abstinence to beguile a melancholy thought. Yea, I'd solicit the deadly weapon to pierce my heart sooner than justly incur your disesteem or general disapprobation. My chief interest, my happiness, my all is in your gift, yet God forbid that I should ever be induced unsuccessfully to ask them to displeasure or dissatisfaction.

Dear Sir, excuse an obscure sentence. It is a precious idea struggling for birth, though long and constrained to remain envelop'd in mystery, and must still so continue till future happy events shall have crown'd my wishes with success. . . . Wonder not, . . . surmise no error, and time, the best arbiter of events, shall unfold the true meaning of

Your devoted Friend and Respectful Humble Servant,

WM. BEAUMONT.

P. S. My best respects to Mrs. Chandler, Mary, and the children. Tho' absent, am not forgetful of their tender kindness and amiable dispositions.

His regiment arrived at Sacketts Harbor on March 27th, and about two weeks later he sent a second letter.

SACKETTS HARBOUR, April 13, 1813.

Doct. Chandler, St. Albans.

DEAR SIR: Notwithstanding I wrote you a few days previous to my leaving Plattsburgh, I feel in duty bound to let you hear from me in whatever situation placed or wherever bound; therefore, having a convenient opportunity, shall presume to trouble your patience, perhaps for the last time, not from a suppression of inclination wholly (tho' not favored with any reply), but from the uncertainty of the situation in which I may be placed.

However widely we may differ in political opinion, yet the sacred ties of gratitude and friendship by which I feel myself so happily bound to you and your family can never permit me to forget the sentiments of reciprocal favor and esteem, nor diminish my personal regard for so kind a benefactor and such amiable friends, by whom I was ever treated with

so much goodness and generosity. Neither do I think that your political prejudices are so great as to render a candid statement of the present condition of this part of the army wholly unwelcome, tho' it may exasperate your feelings and excite many severe reflections on me for returning (as you probably will say), "like a dog to his vomit," to the service again,¹⁵ but I had more than one object to induce me. The first was that my peculiar local and pecuniary circumstances requir'd prompt pay for my services, which no other known condition would so readily afford me; the second was the prospects of an immediate and more extensive practice in surgery, and several other inducements not to be mentioned.

The regular force at this place is not so great as common report would have it. There are about 5,000 soldiers, sailors, and marines, exclusive of the Second Brigade, which arrived a few days since in the adjacent Towns of Brownville and Watertown, eight or ten miles distance. The Jesus-stealer, or Old Rifle's regiment, has not yet come on. General Chandler takes the command, no other being present; General Wilkinson¹⁶ is expected to take the command of the Northern Army, and Colonel Pike¹⁷ is promoted to brigadier-general. An attack on Kingston is pretty certain as soon as the lake opens. The troops are all very healthy. I have but three or four sick in my regiment; have lost none on the march, nor since we arriv'd, tho' our situation is miserable. We are encamped where the mud and water have been over shoe in every direction, in open huts, without any straw, or more than our blankets to cover us. No new or strange disease has occurred since I saw you. No peculiar treatment is required to save the men; the old Brunonian practice, a little varied and changed into the Chandlerian, succeeds almost to a miracle. I have no remarks worthy of communicating, having had no very singular cases. Yesterday we shot a soldier of the marine corps for desertion; we could not obtain the privilege of dissecting him. Next Thursday another is to be shot.

This harbour is very handsome and commodious; the little naval force very respectable, and "not to be sneer'd at." She is now ready to sail, waiting for the ice to clear out, which will be in a few days.

The night preceding my departure from Plattsburgh I saw Mr. Farnsworth, of St. Albans, who communicated your request for cash from me, with which I am extremely sorry it was not in my power to comply, for having been under the necessity of paying all the money I had rec'd to refund borrowed and in d'fraying necessary expenses, I had not ten dollars left to defray the common exigencies of about two hundred miles,

¹⁵ The New England Federalists were greatly opposed to the war with Great Britain because of injurious effects on their commercial interests. The Hartford Convention, held December 15, 1814, gave expression to this opposition.

¹⁶ James Wilkinson had been, at different periods during the Revolutionary War, adjutant-general, brigadier-general, and secretary of the Board of War. As governor of the Louisiana Territory in 1805-6 he intrigued with Aaron Burr in the latter's scheme for founding an empire in Mexico. He was nevertheless made major-general during the War of 1812.

¹⁷ He refers to Colonel Zebulon Montgomery Pike, the patriotic officer and explorer, who, as a young lieutenant, was sent by Jefferson to explore the sources of the Mississippi river and later to fix the northern boundary of Louisiana Territory. It was on this expedition that he sighted the monstrous peak in the Rockies which now bears his name.

and I have rec'd none since. Therefore I beg you would excuse me for not complying. I should have written by Mr. Farnsworth, but the time and his haste would not permit.

I have much on my mind, many unpleasant reflections, and melancholy impressions, but feel an impropriety in suggesting them. Should I ever return to your friendly mansion, again to enjoy the pleasures of domestic friendship and mutual esteem, you shall know my most secret impressions and be satisfied as to the real motive of my heart.

I have only to add the tender of my highest respects and grateful esteem to my friends in that place—Mrs. Chandler, Mary, and the children in particular. I am very unhappy to hear that they have been sick. I hope they have again regained their former health and happiness, which, God Almighty grant for your sake and their comfort, may continue till I am permitted to revisit you and them—henceforth and forevermore. Amen!

WM. BEAUMONT.

P. S. April 18th. Permit me to add that you will soon hear of an engagement. Day after tomorrow we embark on board the ships—forward moving toward the enemy. A friendly Adieu. If I never return, remember and believe that my sincerest gratitude, affection, and esteem belong to you and your family.

CHAPTER IV.

1812-1820.

What happened after this is best described in his own words in a diary, which is reproduced here in full. In one small volume was contained his description of sundry trips, marches, and engagements, while in another notebook were jotted down his observations concerning the prevalent diseases in the army and their treatment. These two diaries are so characteristic and so typical of the different sides of his character that we present them separately, as they exist in fact, even at the expense of slight repetition, instead of combining the two into one narrative for the sake of chronological order and sequence. The pages of both of these little volumes are brown and musty with age, but on the whole remarkably well preserved. The handwriting is quite distinct, as a rule carefully executed, and only a few pages, which evidently at some time had been wet, could not be deciphered.

Sept. 8th, 1812. Quit my Preceptor, Dr. Benjn. Chandler, St. Albans, Vt., under whose friendly inspiration and instruction I happily pursued my medical studies for 2 years to my own satisfaction and that of my Preceptor. Came to Plattsburgh. Joined the Army as Surgeon's mate of the 6th Infy. on the 13th inst. Continued duty as such till Jan'y. 1st, 1813, at which period I suspended duty on account of the unfavorable prospects of the army at that time, and proposed to the people of Plattsburgh to commence private practice in that and the neighboring vicinities. Met with good encouragement during six weeks, in which time visited my respected friends at St. Albans.

On the 15th Feby. recommenced service in 6th Infy. on account of the prospect there was then of an engagement with the Enemy. Continued in camp Saranac¹ till 19th March, when the 1st Brigade marched for Sacketts Harbor, a distance of 180 miles, passing thro a delightful country and many beautiful Villages and Settlements, of which Malone was the first after leaving Plattsburgh, a very flourishing Town situated on an excellent mill stream and surrounded by a fine country of land. Then thro Bangor, Constable, Hopkinton, all very fine Townships, to Canton, a Town very flourishing—people wealthy, affording excellent accommodations to travellers—passing through a Town called Governour, Situated on what is called Salmon river, not much to be admired. Then thro several Towns and small villages of little note to Watertown, a very

¹ United States barracks, four miles above Plattsburgh on the Saranac river.

pleasant village standing on the west side of Black river, within 10 miles of the harbor; it is a Shire Town and very flourishing. From thence to Sacketts Harbor, where we encamp from the 27th March till an embarkation on board the Ships for the Enemy's shores. Sacketts Harbor is a small, but very handsome and commodious harbor; the village is small, irregular, and dirty; much business is carried on in the place—more especially Ship building at this time.

The naval force is very respectable and quite formidable, consisting of one Ship, mounting twenty-four 24-pounders; one Brig, eighteen 18-pounders; nine Schooners of 3, 6, 9, 12 Guns, with pilot boats and cutters duly armed,² in addition to which is now on the stocks a frigate of thirty-six 36-pounders, calculating to be done by the 1st of June.

Sacketts Harbor, 20th April, 1813. The first Brigade, with several detachments from other corps, in readiness and waiting in suspense to em-

WILLIAM BEAUMONT, *adv*

Proposing to commence the practice of
PHYSIC & SURGERY, in the town of
 Plattsburgh, solicits the patronage of the
 good people of this and the neighboring
 vicinities—proffering, as an equivalent for
 their custom and support, his utmost skill,
 fidelity and indefatigable attention to the
 business of his profession.

For further information, inquire at
 Warford and Haskell's office, or at Major
 Warford's house,
 Plattsburgh, Jan. 11, 1813.

An advertisement in the *Plattsburgh Republican*, January 11, 1813, announcing the commencement of practice of medicine (physic and surgery) at Plattsburgh.

bark on board the navy for an expected attack on the enemy. Genl. Dearborn³ arrived in Town tonight.

21st. Weather rainy, wind southeast. Sick mending. Troops waiting for orders to embark. 11 o'clock, nothing remarkable has occurred today. Wind south, weather rainy.

22nd. Embarked with Capt. Humphreys, Capt. Walworth and Muhlenburg and Compy. on board the Schooner Julia. The rest of the Brigade, the 2d with Fourth (?) Rifle Regts. and the light artillery on board the Ship, Brig and other Schooners, remained in the Harbor till next morning.

23rd, 11 Ock. A. M. Weighed Anchor and put out under the impression of going to Kingston. Got out 15 or 20 miles. Came on a storm. Wind ahead and the fleet returned in to harbor. No one permitted to go on shore.

² Compare with Roosevelt's "Naval War of 1812," page 223.

³ Henry Dearborn, of Massachusetts, who was chosen first major-general and commander-in-chief of the Army of the North, had been secretary of war from 1801 to 1809 in Madison's cabinet.



To all who shall see these presents Greeting.

Know Sir, That upon your special Trust and Confidence in the Patriotism, Valour, Fidelity and Abilities of
William B. Ewing, I have nominated, and by and with the Advice and Consent
of the Senate, do appoint him a Surgeon in the 2d Regiment of Infantry in the
UNITED STATES, to serve under the rank of Major, from the 1st of December 1862,
as therein, respectively and diligently to discharge the duties of Surgeon's Mate,



Beaumont's commission as surgeon's mate in the Sixth Regiment of Infantry in the War of 1812, signed by President James Madison. (Size of original, 13 1/2 by 18 1/4 inches.)

~~1st~~ ^{1st} I put my Preceptor
 - Dr. Thos. Chandler,
 St. Albans, Vt. under whose
 friendly instruction & instruction
 in I happily pursued my, med-
 ical studies, for 2 years, to my
 own satisfaction & that of my
 Preceptor - came to Plattsburgh
 - joined the Army - as Surg. Major
 of the 6th Infy on the 13th Inst
 - continued duty as such till
 1st Jan'y 1813. At which period I
 suspended duty on account of the
 unfavorable prospects of the Army
 at that time & proposed to the people
 of Plattsburgh to commence private
 practice in that & the neighboring
 vicinities - met with good success -
 - continuing during six weeks, in
 which time visited my respective
 friends, at St. Albans -
 On the 15th Feb'y. recommenced
 service in 6th Infy on account of
 the prospects there was then of an
 engagement with the Enemy

The first page of Beaumont's descriptive diary while surgeon's mate in the War of 1812, describing his leave-taking from Dr. Chandler, joining the army, entering private practice, and reëntering the army.

24th, 6 Ock. A. M. Put out of harbor with a fair wind, tho mild and pleasant, the fleet sailing in fine order, affording a very pleasant scene Thro the day.

25th, 6 Ock. A. M. Morning most delightful. Wind fresh and increasing, not fair, obliging us to beat. Getting along slowly.

Sacketts Harbor, N.Y. 1813
 continued in Camp Saranac
 till 19th March, when the
 1st Regt. march'd for Sacketts-
 Harbor, a distance of 180 miles
 - passing thro' a delightful country
 & many beautiful Villages & Settle-
 -ments, of which Plattsburgh was
 the first after leaving Plattsburgh
 a very flourishing Town, situated
 on an excellent mill-stream, & sur-
 -rounded by a fine country of
 land - Thru' the 1st Regt. & Canton-
 -ble, Gloppinton, all very fine
 Townships - to Canton - a Town
 very flourishing people wealthy
 & of excellent accommodation
 for travellers - passing thro' a Town
 call'd Governors Sturges on, which
 is call'd Salmon River, not much
 to be admired - thru' the several
 Towns & small Villages, of little note
 to Watertown, a very pleasant Village
 standing on the West side of Black

The second page of Beaumont's descriptive diary shown on opposite page, describing his march from Plattsburgh to Sacketts Harbor.

27th. Wind pretty strong in the morning, increasing to a strong blow, so that the swells run high, tossing our vessels smartly about. Several seasick—was myself. At half-past four o'clock passed by the mouth of Niagara River. This circumstance baffled our imagination where we were going. We were first impressed with the idea of Kingston, then to

Niagara, but now our destination must be Little York. At sunset came in view of York Town & the Fort, where we lay off all night within 3 or 4 leagues.

27th. Sailed into harbor and came to anchor a little below the British Garrison. We now filled the boats and effected a landing, though not without some difficulty and the loss of some men. The British marched their troops from the Garrison down the [hill] to cut us off in landing, and then they had every advantage. They could not effect their [plan]. A hot engagement ensued, in which the enemy lost nearly a third of their men and were soon compelled to quit the field, leaving their dead and wounded strewn in every direction. We lost but very few in the engagement. The enemy returned into garrison, but from the loss sustained in the 1st engagement, the undaunted courage of our men, and the brisk firing from our fleet into the Garrison with 12 and 32-pounders, they were soon obliged to evacuate it and retreat with all possible speed. Driven to this alternative, they devised the inhuman project of blowing up their Magazine (containing 300 Bbls. powder), the explosion of which, shocking to mention, had almost totally destroyed our Army. Above 300 were wounded, and about 60 killed dead on the spot by stones of all dimensions falling like a shower of hail in the midst of our ranks.⁴ The enemy had about 20 killed and wounded by the explosion, tho the main body had retreated far out of the Garrison. After this sad disaster our Army marched into the Garrison, hawled down the British coat of arms (which they were too haughty to do), and raised the American Standard on its place. Our Army was about 1,500 strong—Theirs about the same. Encamped in Garrison this night, mounting a guard 500 strong to secure our safety through the night. A most distressing scene ensues in the Hospital—nothing but the Groans of the wounded and agonies of the Dying are to be heard. The Surgeons wading in blood, cutting off arms, legs, and trepanning heads to rescue their fellow creatures from untimely deaths. To hear the poor creatures crying. "Oh, Dear! Oh, Dear! Oh, my God, my God! Do, Doctor, Doctor! Do cut off my leg, my arm, my head, to relieve me from misery! I can't live, I can't live!" would have rent the heart of steel, and shocked the insensibility of the most hardened assassin and the cruelest savage. It awoke my liveliest sympathy, and I cut and slashed for 48 hours without food or sleep. My God! Who can think of the shocking scene when his fellow-creatures lie mashed and mangled in every part, with a leg, an arm, a head, or a body ground in pieces, without having his very heart pained with the acutest sensibility and his blood chill in his veins. Then, who can behold it without agonizing sympathy!

28th, 10 Ock. A. M. Just got time to suspend capital operation, whilst I can take a little refreshments to sustain life, for the first time since four o'clock yesterday. Return again to the bloody scene of distress, to continue dressing, Amputating and Trepanning. Dressed rising of 50 patients, from simple contusions to the worst of compound fractures, more

⁴General Pike, commanding a force of about 1,700 men, led this attack and was fatally wounded by the explosion. He lived just long enough to hear the American shout of victory.

than half of the last description. Performed two cases of amputation and one of trepanning. 12 Ock. P. M., retired to rest my much fatigued body and mind.

29th. Dressed most of wounds over, Trepanned two. This day ordered to get the sick and wounded on board the fleet, to be transported to Sacketts Harbor. Sent them to the ships, and the most of them were sent back again, very much to the injury of the patients. One of those amputated yesterday does well; the other died in about 12 hours, the fracture being in the thigh and very much contused.

30th. Dressed the wounded, most of them doing well; the two cases of trepanning doing well. The Militia and people giving themselves up to be paroled, nearly 1,700 since the 27th.

May 1st. About my professional employment, dressing the wounded, the most of them doing well. Amputated an arm. On orders for getting all the sick and wounded on board prevents any more operations today. Several more will have to be performed. The wounded on board. All the troops ordered to embark. All on board at six o'clock. Brought off public property taken from his Majesty's stores, estimated to the amount of 2,000,000 and a half dollars. Burnt the ruins of the Government house, the Block-house, one or two public stores and an old sloop.

2nd. Wind unfavorable to sailing out—consequently we remain in the fleet where we were today. The sick and wounded lying distributed among the fleet. I can not note their several conditions—those on board this (The Julia) doing well.

3rd. Still lying at anchor, waiting for a fair wind, or something else. The wounded do well.

4th. At anchor in York harbor, waiting for the storm to subside.

5th. Still at Anchor, wind high, men sickening and miserably crowded in the hold of the ship.

6th. Not weighed anchor yet, wind high, weather stormy and boisterous.

7th. Storm subsiding at night, cold and chilly. Men complaining much of Diarrhoea and Dysenteries. The wounded doing far better than could be expected in such a miserable condition.

8th. Weighed anchor and got under way for Niagara. Arrived here at 5 Ock. Landed the troops. This morning one man died in the hold, mainly, I believe, from suffocation, as he had not been much ill, except a slight wound on the back by a stone from the explosion. Had not time to examine him.

9th. Tents struck at Four Mile Creek, four miles from the Garrison. Genl. Boice takes comd. of the Brigade.

10th. The Fleet sailed for Sacketts Harbor this morning before sunrise, carrying part of the sick and wounded, and are expected to bring on more troops from the harbor.

May 11th. This morning arrived from Oswego in Sail-boats part of the 2d Regt. Artillery, between three and four hundred. In the afternoon I attended the sale of Genl. Sheaffe's baggage at public auction taken at

York.⁵ Saw his most superb Scarlet coat sold for \$55, which I presume cost not less than \$300. It was the most elegant thing I ever saw—it was most elegantly embroidered in Gold and of the finest quality. His other things sold very high, being good and much wanted by our officers—I purchased nothing.

12th, 13th, 14th, 15th. Nothing worthy of note. Have not been out of camp. 16th and 17th. Nothing worthy of remark.

18th. Visited the Falls of Niagara, that Great National Curiosity, which at one view impresses the mind of every sensible beholder with sublime and reverential Ideas. To contemplate the magnificent works of creation in viewing such an immense column of water, precipitated with such tremendous velocity over a stupendous height of 200 feet perpendicular descent, raising from its force a mountain of foam and clouds of fog, forming all the beautiful prismatic colors of the rainbow, almost within your reach, would force the incredulity of an Atheist to acknowledge the existence of a God. In passing from the Garrison up the River had a plain, uninterrupted view of Fort George, his Majesty's Garrison, about a mile above Fort Niagara on the opposite side of the mouth of the Niagara River, and of all the settlement on that shore to the Falls, a distance of 18 miles, which are pleasant and handsomely situated. Queenstown is situated on a platt, at the foot of a pretty high hill, on which is a Fort, where Genl. Van Rensselaar was defeated and Genl. Brock killed.⁶ Chippewa is a small village one mile above the Falls, very pleasantly situated on the banks of the Niagara River.

19th. Returned from the Falls, visiting an Indian Village about 3 miles off the road. Was much delighted at some particular maneuvers that occurred. They appear to have been industrious in cultivating their farms. Their farms were pleasant, their land well tilled.

20th. Part of the Fleet returned from Sacketts Harbor laden with troops; also about 400 from Oswego arrived in boats.

21st. The rest of the Fleet, excepting the Ship, arrived today, bringing in the whole about 1,800 men; 13 boat loads from Oswego also arrived today with about 500 men.

22nd. General orders for preparing for Battle, and an attack on Fort George.

23rd, 24th, 25th, 26th. Waiting for orders to embark.

27th. Embarked at break of day. Col. Scott,⁷ with 800 men for the

⁵ Sir Roger H. Sheaffe, major-general in the British army, who afterward defeated the Americans at Queenstown in 1813.

⁶ In the battle of Queenstown General Stephen Van Rensselaer, commanding the New York militia and a few regulars, sent 1,000 men across to the Canada side of the Niagara. They succeeded in carrying the British batteries on the heights, commanded by the British General Brock. More troops were necessary to hold the vantage gained because of British reinforcements from Fort George. General Van Rensselaer then ordered the remaining division of New York militia, 1,200 strong, to hasten to the rescue. They refused to obey the order, declaring that they were there to defend the United States and not to invade Canada. Defeat followed, and General Van Rensselaer in disgust resigned his command.

⁷ Winfield Scott, whose general appearance and strict military discipline won for him the epithet of "Old Fuss and Feathers," afterward became brigadier-general, and in 1841 succeeded General Macomb as commander-in-chief of the United States army.

advance Guard, supported by the first Brigade, comd. by Genl. Boyd, moved in concert with the shipping to the enemy's shore and landed under the enemy's Battery and in front of their fire, under cover of our shipping, with surprising success, not losing more than 30 men in the engagement, tho the enemy's whole force was placed in the most advantageous situation possible. Notwithstanding, we routed them from their mounted and chosen spot, and drove them out of the country. Took possession of the Town (Newark) and Garrison. Killed of the British, rising 100; wounded, rising 200; prisoners, 100.

28th. Part of the Army proceeded to Queenstown, 6 miles above. Caus'd the enemy to evacuate that Garrison. Took some prisoners.

29th. In peaceable possession of the Fort, the enemy retreating for Kingston. Comd. in the G. Hospital.

30th. No alteration. The fleet sails for S. Harbor.

31st. As usual, fair. Well in the place.

June 1st, 1813. As we were.

2nd. Genl. Winder's* Regt. moved for a part unknown to me.

3rd. Fired a Feu-de-joy in consequence of Genl. Geo. Prevost's defeat in an attempt to land his troops at Sacketts Harbor and burn and destroy the place.⁹

21st. Mov'd the wounded from the Hospital in the Garrison at Newark to Lewiston, on our side. Took a walk into the country, returned just before tattoo and retired to rest. Recommenced duty in Genl. Hospital, Lewiston, 28th June. Continued duty till 13th Aug., when, being unwell and ordered to Ft. Geo., suspended active duty.¹⁰ Aug. 22nd recd. orders to repair to Fort George immediately. Gone.

The small notebook containing the following medical notes is bound in buckskin, and could readily be carried in the pocket. It shows evidence of much hard wear, and was doubtless with him in the thick of the fray. While some of these observations were made for official record, it is evident that in great part they were simply the expression of that almost innate tendency to record everything that

*General William H. Winder led successful expeditions below Fort Erie in 1812 and at Stony Creek in 1813, but was defeated at Bladensburg in 1814.

⁹While the Americans were moving against York the British, under General George Prevost, took advantage of the unfortified state of Sacketts Harbor. While they succeeded in destroying some of the stores, they were finally repulsed, with considerable loss, by the militia, who were left in charge of General Jacob Brown.

¹⁰In describing the lamentable conditions prevailing at Fort George at this time, Surgeon Mann, medical director, wrote: "During the month of August an uncommon proportion of the army was sick or unfit for duty. More than one-third of the soldiers were on the sick reports. The officers shared with the privates in the prevailing disease. Half of the medical staff attached to the regiments were also unable to perform their duty. Of seven surgeon's mates attached to the hospital department, one died and three had leave of absence by reason of indisposition; the other three were for a short period sick. So general was the sickness, the remaining surgeons could not do full justice to their patients. At the time when the returns of the sick in general hospital counted between six and seven hundred, there were only three surgeons of this department present for duty." (Brown's "Medical Department of the United States Army.")

day up considerably, quite free from
 pain. takes much more rest, and
 feels better. action much better. caplets
 carry force - progress regular. some
 trouble with dysentery. But all the
 what must be considered in the condition
 of the state - Sunday afternoon
 all day week so far nice
 and as to ride in Wagon to
 Cambridge. 12.1 when in a
 day got married. Very
 good health, & good
 day.

September 13th 1812
 Commenced practice in the
 U. S. Army as Surg. Mate
 of the 6th Regt. Infy.

Prevailing type of Disease, -
 Intermittent Typhus
 Dysenteries & Rheumatism -
 Treatment of Intermittent

A page from a notebook of medical observations kept by Beaumont during the War of 1812.

interested him greatly, whether his own innermost thoughts or the words of wisdom of others.

September 13th, 1812. Commenced practice in the U. S. Army as surg's. Mate of the 6th Regt. Infy. Prevailing type of Disease, Intermittent, Typhus, Dysenteries and Rheumatism.

in the first instance, gave an
 Emetic of Tart. Ant., followed
 with a brisk cathartic of Jalap,
 Rhel., Ol. Ricin. Sometimes com-
 bined with cal., then Sudorifics
 chiefly Antimonials, & Alkalies
 & a free use of the bark in Deco-
 — which treatment generally
 effected a recovery in a week
 or ten days. Tho' some obstinate
 cases run on for three or four
 weeks, terminating in Typhus
 prior in which I gave bark
 wine, Opium, Soporatives, & the
 Berriman Pill, with a liberal
 hand & with very good success, not
 losing more than an out of
 fifty. — But I am a particular
 lover of that small & often re-
 — and cases of Typhus, Emet. Tart. &
 Opium with the Saline Draught

The succeeding page of the notebook shown on opposite page, outlining his treatment of the prevailing diseases.

Treatment of Intermittent—in the first instance, gave an Emetic of Tart. Ant., followed with a brisk cathartic of Jalap, Rhel., Ol Ricin. Sometimes combined with calomel, then Sudorifics, chiefly Antimonials and Alkalies, and a free use of the bark in Decoction, which treatment generally effected a recovery in a week or ten days, tho some obstinate cases

run on for three or four weeks, terminating in Typhus Gravior, in which I gave bark wine, Opium, Serpintaria and the Brunonian Pill with a liberal hand and with very good success, not losing more than one out of fifty. But from a particular [case] learnt that small and oft repeated doses of Ipecac, Emet. Tart. & Opil., with the Saline draught, were preferable to any other mode of practice. The Ipecac or Emet. Tart. in doses from $\frac{1}{2}$ to grain every three hours, with half grain Opil., had an astonishing effect in cleansing the prima viae, cleaning the tongue of the foul dark coat and opening the cutaneous pores, and of course obviating the symptoms. Cal. in extreme low cases was had recourse to with wonderful success in doses from $\frac{1}{2}$ gr. to gr. every three hours till the Glands were touched, especially when there was an affection of Lungs, which was generally the case in the Hospital at this time. The Bark and wine were in most cases of Typhus detriment in and often fatal, as was obvious from that fatal practice in some of the other departments of the Army. Instance 15th Regt., who died at the rate of two out of three under that practice.

In Dysenteries and Diarrhoeas half a grain Ipecac and a simple solution of Sal Natron were generally sufficient to carry off the disease.

The Rheumatism, in the exposed situation in which the men were placed, was very difficult to cure. The Opium, Gualiac, and Spirits were most useful in checking the pain—sometimes removing them, but not often.

Near the Middle of November the Army moved from Plattsburgh to the Province Line, 45 Deg. North, taking no tents, and destitute of covering, save a Blanket or two, lying out in open air after marching all day through the mud and water, and thus exposed to the inclemencies of the weather for a week, encamp't in the woods. After which the army returned to Plattsburgh, and there encamp'd again in the woods without Tents or Huts the first night, which was very rainy and cold; the Second also was wet and windy. They then moved to Saranac, and encamped again in the woods, during which time the weather was very various—warm and cold, sometimes raining, sometimes snowing—the men lying upon the cold, wet ground, with only a fire before their tents, for two, three or four weeks. Whilst in this wretched and deplorable situation, the men were seized with Dysentary, Intermittants, Pleurisy, Peripneumony, Cynanche and Rheumatism, which made the very woods ring with coughing and groaning.

The Dysentary, I found, soon yielded to the use of Opium and Ipecac in doses of half a grain each to a grain of Opium at night and half a grain in the Morning without the Ipecac—some, however, would run on and terminate in Typhus.

Intermittants were found to yield to the use of Opium & Tart. Ant. in doses of half a grain of the former combined with a grain of the latter every three or four hours. Where the Stomach was foul, it first required a full Emetic of Tart. Emt. & the Intestines cleaned by brisk cathartic.

In Pleurisy and Peripneumony, bleeding on the first attack till the symptom subsided was the most salutary of anything, and when omitted

was always regretted, as it very much retarded the recovery of the patient and increased the violence of disease. Often one copious bleeding, the use of Opium, Glyr. Senn. Tart. Ant. and Digitalis in equal proportions by bulk, were verily efficacious in relieving the cough, and generally the only medicine required to cure the disease. Blistering became necessary in obstinate cases when bleeding did not relieve the stitch in the side and pain in the head, which it seldom ever fail'd of doing when had recourse to in time.

The treatment of the foregoing diseases I am warranted in adapting from the happy issue and successful termination of more than two hundred cases, out of which not one has died while under my care.

Some cases run on for some time, terminating in a bilious remittant, with a continual vomiting and rejecting everything taken in the Stomach; with Diarrhoea, in which cases the mucilage of Gum Arabic and Elix. Nit. have soon corrected the irritability of the stomach, and saved the patient, who otherwise must have died.

Tuesday, Dec. 8th. Weather warmish and cloudy, air damp, ground thawing and wet. Men complaining of Dysentary, Pleurisy, and Peripneumony. Bleed without measure or weight, give Opium, Glyr. Tart. Ant. and Digit. in pleurisy Peripneumony, and have the happiness to see my patients recovering daily under the treatment. Evening damp and chilly. Men lying in tents, with small fires in front.

Wednesday, Dec. 9th, 1812. Weather chilly and cloudy. Several new cases this morning. The old ones doing well under the former treatment—cough subsiding, pains diminishing and appetite amending. Gave this morning the Anti-Dysenteric Pill to those who were complaining of bad relax. In the Typhus cases gave Opium, Ipecac, Tart. Ant. half grain each every three hours with evident good effects. In the case of one Covet, who has been for two weeks very low with the Typhus, so as to be unable to help himself or even to take scarce any nourishment on his stomach without immediately rejecting same, followed with a constant straining to vomit, he was seized last night with a most excruciating pain in his left side, extending from his hip to the cap of his left shoulder. So severe was the pain that he could scarce breathe without screaming; his extremities cold, and no pulsation to be felt. Indeed, I thought he would have died in spite of medicine, but by giving 60 gtts. laud., repeated in about 15 minutes, with the use of warm fomentations, he got easier, arterial action was restored, and he was made quite comfortable thro the night by repeating the laudanum every two hours in doses of 15 gtts. at a time. The Elix. Vitriol in doses of 12 gtts. every two hours, with a tablespoonful of the mucilage of Gum Arabic, was the first thing that would check the vomiting and nausea. Today his stomach bears food in small quantities; no vomiting this day, but very weak. Wednesday evening, 8 o'clock.

Thursday, 11 A. M. Men in Hospital better. Covet continues to mend under the use of laudanum Elix. Vit. and broth. Several new cases of Pleurisy, Peripneumony, and Dysentary, in which I continue to bleed,

give opium, Tart. Ant. and ipecac with evident success, many that came yesterday being able to do duty today.

Friday, 11 A. M. Weather cold and falling snows. But few new cases this morning. All in Hospital much better. Covet continues to mend under the former treatment. Giving today a Decoct. of Gualac and Serpt. Virgin, Typhus yields to the use of Ipecac and Opium and nourishment.

Saturday, 11 A. M. Men in Hospital doing well—most of them convalescent. Continue the same treatment. There are four new cases—principally intermittents, one pneumonia. Covet mending fast. Dysentary and Diarrhœa yields to the use of the Anti-dysenteric Pill in two or three days. Saturday evening, 9 o'clock.

Remarks. Ascertained the treatment of the Surgeon (Gilliland) of the 11th Regt. in this camp in diseases now prevailing, which is to give from one to three Emets. & as many cathartics, in order, he says, to cleanse the *prima viæ* and obviate the symptoms of a bilious Diarrhœa, and then give tonics. Behold the gasping, gasping Mortals, how they die! From two to five in a day! Twenty-six in the course of two weeks out of four hundred. Can it be correct practice when, in the next Regt., out of Six hundred, in an exactly similar situation and laboring under the same diseases, not one has died in the same time under a diametrically opposite practice? No! depletion by blood-letting and antimonial sudorifics and diaphoretics, and an entire dissuade of all tonic medicines, is the proper plan of cure.

Suspended Duty in the Army from the 1st January, 1813, till the 15th February. Commenced Boarding with Doct. Bradford 19th Feby.

Peripneumonics prevailing in Camp. Sergt. Fulton taken violently with all the alarming symptoms. Was bled in the first instance & blistered, which relieved the pain in the side partially; yet he was laboring under dyspnoea, with pain and stricture across his breast, dry skin, general lassitude and great wakefulness, some times delirious, and very weak. Gave the alterant Pill, barley tea, Antimonials, Elix. Paregoric, and applied another blister, which treatment very much relieved Symptoms by promoting a free expectoration & gentle diaphoresis. On the 4th day gave the wine moderately with the mucilage of barley, a decoction of the Seneka and Serpt. Virg., under which treatment he continues to mend, tho very moderately on account of the negligence of his attendance. March 1st, Recovered.

Taken on the 17th Feby., 1813, L. D. F., with the common, but more violent symptoms of Peripneumony. Was bled by Doct. B——d, but perhaps to no great advantage, it seeming to increase the pains. I found him extremely debilitated, in excessive pain, great difficulty of breathing, stricture across the breast; tongue dark, dry and husky; perspiration entirely suppressed, with delirium. Ordered warm bathing, with warm hemlock Tinct. extensively; humid baths to his feet. Gave the alterant powders of opil. Ipecac. and Cal. every two hours, applied blisters to the breast. Gave the Elix. Paregr. with Tart. Ant. with two drops Ol. Cin. and twelve of Ether Nit. every four hours; for nourishment gave the barley

tea, with wine. In 36 hours he began to mend and continued so to do under the use of wine, barley water, and Brunonian Pill, this being the 14th day of the disease; he is free from pain, breathing free, and free capillaries; his tongue clear, and appetite fast amending—indeed he is convalescent. Recovered.

James McMullen, having long labored under Tisis. Pulm., died on the 25th Feby. with an Hemorragy from the Lungs in consequence of a violent fit of coughing.

Sundry cases of Peripneumony, all yielding to the foregoing treatment of this disease.

The Sixth Regt. March'd from Plattsburgh on the 19th of March, 1813. The weather cold first day—warm and pasty; some of the men marching over shoe in snow and water, the rest riding in sleighs. 1st night lay out in open air, the next day cold and raining. Men riding kept out till 12 ock. P. M., and then lie in barns or in open air. But few complaining; none left behind in consequence of sickness. 3d day clear and cold; 4th, snowed in the morning, clear and pleasant in the latter part, at night men in good quarters; 5th, pleasant and thawing; 6th, also pleasant; 7th, cold; 8th, clear, thawing, but chilly south wind; arrived at Sacketts Harbor, leaving not a sick man behind; encampt at night in open huts; 9th day, a few complaining of Intermittant type; 10th, one or two cases of Pneumonia symptoms, none confined; 11th, some complaining of intermittants, not one confined to bed or bunk.

April 1st, 1813, Sacketts Harbor. Type of disease, Intermittant, in many cases complicated with Peripneumony. Symptoms in general, universal pain in the bones and muscles; cold, chilly; nausea and pain in the head and breast, and sometimes accompanied with acute local pain in the side, with cough and other evident Pneumonia symptoms. Treatment—When Pneumonia symptoms most prevail, use the lancet early in the attack, Epispastics and Antimonialls. In the Intermittant Type give the Pillules Chandler, a Tart. Ant. and cal., so as to puke and purge smartly, followed with the Pill Brunonian and Tart. Ant. and cal. in alternate doses today.

From Sacketts Harbor the Troops embarked on board the Fleet about 1,500 in 14 vessels—1 ship, 1 Brig, and 12 schooners. Three companies of our Regt. were on board the Schr. Julia (Capt. Trent commanding). We were 5 days from the harbor to York. Tho our men were very much crowded both in the hold and on deck, we had none remaining on board while we debarked—all were able to fight like good fellows. 4 or 5 men were left sick on board the other vessels of our Regt. Not any of our men were wounded in the engagement, but by the explosion of the Magazines our Regt. suffered more than any other, being the most advanced body and within $\frac{1}{2}$ mile of explosion. A most shocking scene ensued, the stones falling thick as hail in all directions. Cut, bruised, and mangled the men most shockingly. About 60 were killed dead on the spot, 20 of ours, and 250 wounded, of which 109 belonged to our Regt. The wounds were of the worst kind—compound fractures of legs, thighs, and arms, and fractures of skulls. On the night of the explosion we were all night

engaged in amputating and dressing the worst of them, the next day also, and the day after I performed four amputations and 3 trepanings. On the fourth day after we came into the British Garrison we were ordered to get the sick and wounded on board. They were crowded into the vessels indiscriminately with their respective companies, and remained in this condition for 8 days. Some of the worst of the wounded were not even dressed in the meantime, in consequence of the Surgeons not being able to attend the several vessels on account of the bolsterous wind and storm which prevailed the whole time.

Besides the wounded there were numerous cases of Dysenteries and Diarrhoeas prevailing, and seven cases of Typhus fever at least on board the Julia, and I presume more in many of the other vessels.

May 14th. Camp near Niagara. Some cases of Typhus and a few intermittants, but the principal business at present is to dress wounds recd. at the battle in York, or rather in the explosion of the Magazine—all lacerations and contusions, the compound fractures and amputations being sent to the hospital.

James Bartlett, a soldier of the 6th Inftry., received a severe contusion at the time of the explosion on the Glutii Muscle of the left side—had nothing done to it for near two weeks. At this time he came to me with a soft fluctuating tumor on the point of buttock, surrounded by a hard circular edge; no inflammation, but had some sharp, throbbing pains and soreness. I directed emollient poultices for 24 hours; it appeared softer, but no soreness ensued. I then directed him to continue the poultices 24 hours longer; then on close examination there are evident appearance of much fluid matter, either of pus or extravasated blood, but from its livid, dull and indurated appearance conceived it to be the latter, and to operation. I punctured and found nothing but black grumous blood, which discharged not very freely. I then directed a poultice of black alder bark and flower to be applied constantly, as there was nothing else to be procured in the situation we were then in.

15th. This morning the tumor is more soft, but no pus appears yet.

16th. Tumor continues to abate, pain less, and continues to discharge grumous blood to the relief of the pain; no pus. Came to mature supuration and recovered.

A singular case of fractured cranium by a musket ball in the Battle of Newark (N C). 27th May, 1813. A soldier received the Ball on the upper and right edge of the occipital bone, directly over the lateral sinus. The ball lodged under the integuments and depressed a piece of the bone about $1\frac{1}{8}$ inches long and $\frac{3}{4}$ inch broad, running in a direction from the superior part of the Os occipitis towards the right ear. It was depressed the whole thickness of the skull. The patient complained very little of any pain or uneasiness for 8 or 10 days. No evident symptoms of depression appeared, had a good appetite, could walk about without inconvenience. Complained sometimes of sickness of the stomach and vertigo, his countenance was rather sallow, but not comatose at all. On a thorough examination of the case and due consideration of the probable event

of such a wound, the depressed part being entirely dead, Doct. Daniel (Hosp. Surgn. Genl.), Doct Lovell¹¹ and myself thought it advisable to trepan without delay. Judging from the nature of the case that the injured bone must exfoliate sooner or later and kill the patient if not removed, the operation was performed by Doct. Lovell in a most adroit and masterly manner, and, perforating the sound edge of the bone about the depressed portion, the trephine at one side seem'd quickly thro, but the other requir'd considerable longer and cautious labor before it appeared through. No hemorrhagy ensued till the circular was raised by the levator, when the blood gushed from the lateral sinus in a stream as large as my little finger, threatening instant death, but Dr. Lovell, by compressing the lacerated sinus with his finger till the fractured pieces could be taken out, and then compressing it with soft lint, perfectly secur'd it from bleeding. Put on the dressings, and the patient got up and walked about as before apparently.

How long Beaumont was ill at Fort George and away from active duty, as noted in the final sentence of his descriptive diary, is not revealed, but he was more or less active throughout the campaign. In August, 1814, he took part in the battle of Plattsburgh under General Macomb,¹² who, with 7,500 men and a fleet of fourteen vessels, defeated General George Prevost with 14,000 men and a flotilla of sixteen vessels. The American fleet was victorious in Plattsburgh Bay, and helped turn the tide of battle in favor of the land forces.

The part played by the surgeons in this engagement was well expressed by Hospital Surgeon James Mann, medical director at Plattsburgh, in his report to Surgeon James Tilton:¹³

In events of high importance it is seldom the Medical Staff are noticed. This is discouraging to the ambitious young surgeon of the army. It may be alleged the surgeons, being noncombatants, are out of danger. This, however, is not always the case. During the investment of Plattsburgh by the enemy the surgeons were constantly passing from fort to fort or to block-houses to dress the wounded, exposed to a cross fire of round and grape shot, while the greater part of the army was covered by fortifications. The cool bravery of the surgeons was, in private conversation, noticed by the commander-in-chief. Had half as much been reported to the War Department respecting them, they would have felt themselves

¹¹ Dr. Joseph Lovell, whose name we find mentioned here for the first time, remained a lifelong friend of Dr. Beaumont. He was made the first surgeon-general of the United States army in 1818, and in this official position played an important role in Beaumont's epoch-making work on St. Martin. Many references will be made to him in the course of this work.

¹² Alexander Macomb, while adjutant-general of the army, took service in the field and was made major-general after winning this victory.

¹³ "The Medical Department of the United States Army from 1775 to 1873," by Harvey E. Brown, assistant surgeon of the United States army.

amply compensated. If any officer had hardships attached to his office, it was the surgeon, who executed his office with fidelity and assiduity. I feel myself bound to report, with much respect, the conduct of all the medical gentlemen attached to this army, who have at all times during the campaign performed their duty, and who, for their particular services during and after the investment of Plattsburgh by the enemy, merit the applause of their country. To discriminate would be an act of injustice. Doctors Lawson and Mason, surgeons of regiments, and Warmsley, Beaumont, and Hugo, surgeon's mates, have all deserved well of their government.

A few months later, December, 1814, the treaty of Ghent was concluded, putting an end to activities, and was ratified February, 1815. It is probable that Dr. Beaumont contemplated leaving this section on the resumption of peace. At any rate, there were executed about this time by the Champlain Chapter of the Masonic order, to which he belonged, testimonials similar to those taken with him from St. Albans. These testimonials state that "he stands high in the estimation and esteem of all those of his acquaintance whose good opinion is valuable, and is considered as a young man of an amiable heart, exemplary morals and conduct, and skillful and assiduous in the duties of his profession," etc.; that he is "possessed of a benevolent heart, honest and honorable in all his intentions, faithful to his friends, and just to his enemies: his reputation is unsullied, and his professional character stands high in the opinion of those with whom he is acquainted." Among the signatures on these certificates are recognized such names as Reuben Walworth,¹⁴ Levi Platt, and others who left their marks in the history of the country. If he did really contemplate leaving Plattsburgh, he did not carry out his intention, but remained there and in the army. In March, 1815, President Madison determined to reduce the army to 10,000 men, with a proportionate number of officers, and requested through Secretary of War A. J. Dallas a report as to the respective merits of the various officers. The secretary, in a confidential communication to the colonel commanding the Twenty-ninth regiment of United States infantry, wrote, "However painful it may be to discriminate between men who have served their country at a very interesting crisis, yet justice to them

¹⁴Reuben Hyde Walworth, who was admitted to the bar in 1809 and settled in Plattsburgh, became master in chancery in 1811, and soon rose to great eminence. He was a Democratic member of Congress, representing New York from 1821 to 1823, circuit judge from 1823 to 1828, and chancellor of New York from 1828 to 1848. Mr. Justice Story pronounced him the "greatest equity jurist living."

as well as to the public requires that those who have most merit should be retained." On this basis Beaumont was retained in May, 1815, in the Sixth Infantry, while hundreds higher in rank and older in service were dropped.

There is fragmentary, though unmistakable, evidence of an interesting episode which occurred about this period of his career. It is one of the many that shows Beaumont's courage and his determination to stand up for what he considered right at any cost. On this occasion he was willing to risk his life on account of a question of honor, which arose between him and one Captain Richards, of the artillery corps, and, while this turned out to be but a war of words, Dr. Beaumont was prepared for action. We shall not endeavor to give a complete synopsis of this circular, but present it here in its original form (pages 58, 59), and leave the deciphering and unraveling for the reader at his leisure. Suffice it to say that he sent a challenge to a duel, for some cause not mentioned, to Captain Richards by his friend Captain Shell. Richards would not accept the note, but in the presence of others received a verbal communication from Shell, in response to which he made concessions to Dr. Beaumont and expressed a desire to bury the hatchet. In the face of this fact he, however, posts broadcast in a public circular a mass of falsehoods and fabrications, which are finally republished and appear over his name in the first five paragraphs of this poster. This cowardly deed prompted Dr. Beaumont on the morning of June 11, 1815, to publish him to the world in a similar manner as "a contemptible liar, a base villain, and a poltroon." All of this evidence, with the signed statements of a number of other officers, appear in this poster as the final word in the controversy, and thirty-seven of his fellow officers¹⁵ from various regiments affixed their names to the following statement:

We, the undersigned, officers of the U. S. Army, have no reason to doubt from personal knowledge and authentic information that Captain G. H. Richards, of the corps of U. S. Artillery, has, from want of honor and integrity, so far disgraced himself as to be guilty of conduct unbecoming an officer and a gentleman in attempting, by low, base, and cowardly means, to evade meeting Doct. Beaumont, Surgeon's Mate of the 6th reg. U. S. Infantry, after having traduced and attempted to injure his

¹⁵ Among these may be seen (page 59) the name of Thomas Lawson, surgeon of the Sixth Infantry, who, after the death of Dr. Joseph Lovell, was made surgeon-general of the United States, and in this capacity subjected his friend and companion, Dr. Beaumont, as will be shown later in this narrative, to much inconvenience, discomfiture, and humiliation in his old age.

character, thereby compelling his (Richard's) friend to abandon him, and suffering himself to be published as a "Liar, Villain, and Poltroon;" and we further believe Doctor Beaumont to have been actuated by no other principles than those which honor and justice should dictate to every gentleman in a similar situation.

This was Surgeon Beaumont's last victory in the War of 1812-1815, for a few months later he tendered his resignation to the commanding officer, with a view to entering private practice in the town of Plattsburgh, where he had already hosts of friends and a well-earned professional reputation. It has been stated that he resigned because of insufficient advancement in the service, but to one who has made a study of his life it would seem more probable that his position in the army in these times of peace in a small and healthful garrison offered him too little mental stimulus to continue in the service.¹⁶

Soon after resigning from the army, Dr. Beaumont entered into partnership with Dr. G. Senter, another army surgeon,¹⁷ and announced to the public that they had "commenced business in the line of their profession (Physic and Surgery)." They also opened a store containing a "general assortment of drugs, medicines, groceries, dye woods, etc., which they calculate to sell on liberal terms for cash or approved credit."¹⁸ A few months later they dissolved partnership on account of Dr. Senter having to go south, and the firm became Beaumont & Wheelock. Dr. Beaumont's notion of an up-keep in the grocery line is rather amusing. The *Plattsburgh Republican* of September 6, 1816, contained the following announcement:

Beaumont & Wheelock have just received and offer for sale at the lowest prices a large and well-selected assortment of Groceries, consisting of Madeira, Port, London Particular, and Sherry Wines, Cognac and French Brandy, Jamaica, St. Croix and New England Rum, Pierpont Gin, Molasses, Tea, Lump and Loaf Sugar, Rice, Coffee, Salt, Pepper, Allspice, Ginger, Plug and Paper Tobacco, Pipes, Codfish, Shad, Mackerel, Chocolate, Spanish Segars, Window Glass, Snuff, Starch, Powder, Shot, Almonds,

¹⁶ Another potent reason for Beaumont's resignation may be found in a letter dated Malone, February 14, 1814, in which Surgeon Mann, writing to Dr. Tilton in the name of the medical officers of his department, says: "This is a fact, and a serious one too, that the surgeons and mates of regiments, under existing encouragements, have no inducements to continue long in service. Curiosity alone will induce them to sacrifice the term of one year in service. This being gratified, its exciting powers lose their effects. The pay and emoluments of surgeons and mates of regiments do not give them a support, especially on the frontiers of Canada, where the articles of life are procured at the most extravagant prices." (Brown's "Medical Department of the United States Army.")

¹⁷ See list of officers attached to poster in the affair of Captain Richards.

¹⁸ *Plattsburgh Republican*, December 15, 1815.

it is about half an hour, the distance (two miles and a half.

NOTICE.

Drs. Beaumont & Senter

INFORM their friends and the public that they have commenced business in the line of their profession, (Physic and Surgery) and have established their office in the upper part of the corner Stone lately occupied by B. Gilman, in the Village of Plattsburgh, where one or both of them may generally be found.

THEY HAVE ALSO OPENED A

STORE

Containing a General Assortment of

DRUGS; MEDICINS,

GROCERIES,

DYE WOODS, &c.

Of the first quality and choicest selection—which they calculate to sell on liberal terms for cash or approved credit.

WM. BEAUMONT,
G. SENTER.

Plattsburgh, Dec. 15, 1815.

N. B. Medicines, &c. will be put up with accuracy and care.

An advertisement in the *Plattsburgh Republican*, December 15, 1815, announcing Beaumont's entry into private practice and the opening of a general store, with a partnership arrangement.

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Lord Exmouth was to leave England the last of July, to take the barbarians by the beard. Not only the town and fortress of Algiers are to be razed to the ground, but the government is to be demolished. We shall see or we shall soon see it! Col.

Beaumont & Wheelock

HAVE just received, and offer for sale at the lowest prices, a large and well selected assortment of

GROCERIES,

Consisting of Madeira, Port, London Particular, and Sherry WINKS, Corn and French BRANDY—Jamaica, St. Croix, and New-England RUM—Pierpont GIN—Molasses, Tea, Lump and Loaf Sugar, Rice, Coffee, Salt, Pepper, Allspice, Ginger, Plug and Paper Tobacco, Pipes, Codfish, Shad, Mackerel, Chocolate, Spanish Serrano, Window Glass, Souff, Starch, Powder, Shot, Almonds, &c.

Also,

In addition to their former stock, a large assortment of

Drugs & Medicines,
Dye Woods,
&c. &c.

Sept. 6, 1816.

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An advertisement in the *Plattsburgh Republican*, September 6, 1816, revealing a change of partnership and announcing the sale of a unique line of "groceries."⁵

etc. Also In Addition to their former stock a large assortment of Drugs and Medicines, Dye Woods, etc., etc.

He kept store for about a year, and in December, 1816,¹⁰ sold out

¹⁰ Preparatory to selling out, he inserted the following announcement in the *Plattsburgh Republican* on November 16, 1816: NOTICE—PROMPT PAYMENT REQUIRED.—The subscribers, feeling the necessity of fulfilling honorable engagements in confidential dealings between man and man, and more especially in debts contracted on short credit for the accommodation of the people, are now under the disagreeable necessity of demanding immediate payment from their customers to whom they have given the indulgence of a short credit on cash terms, expecting payment without calling. One week only will be given for the payment of demands, after which they will be left in the hands of an attorney for legal collection. BEAUMONT & WHELOCK.

to Springer & Woodward, after which he confined himself entirely to the practice of his profession.

Plattsburgh township was at this time by far the most populous in the county of Clinton.²⁰ The inhabitants were principally farmers of domestic and peaceful habits, whose household manufactures supplied the common and much of the fine clothing. The village nestled beautifully at the mouth of the Saranac river, consisted of about seventy houses and stores, a Presbyterian church, several mills, a court house, and the county prison. The barracks at which Beaumont had been stationed were five miles above the village on the Saranac river. Clinton county was sparsely settled, the roads necessarily rough and the rides long. The Doctor was therefore compelled to be more or less constantly in the saddle, carrying with him his saddle-bag, filled with drugs and such instruments as were necessary for minor operations, blood-letting, and the like. His popularity is shown by the fact that he was soon elected a member and treasurer of "The Forum," doubtless a literary organization,²¹ whose membership was composed of the elite of Plattsburgh. In view of some misunderstanding, however, he tendered his resignation as member and treasurer on November 1, 1817, in a very characteristic manner, presenting his statement "of the funds of the Forum," and exhibiting therein a keen sense of humor, together with a bit of sarcasm, in the summing up of his treasurer's report, as follows:

Dr.	Cr.
\$15.13	\$15.13
Leaving.....	000000.00

which is duly recommended to the serious consideration of the honorable Town.

The Treasurer takes this opportunity of tendering the resignation of his appointment under the impression that his successor will be a person of adequate honesty and responsibility for the safety of the funds to the entire satisfaction of the honorable society. And that he may not be, like his predecessor in that office, indirectly impeached for a breach of trust by any unprecedented order of the Society without his knowledge or the least shadow of a reason assigned for such an egregious imposition upon every honest and manly feeling, is the prayer of

WILLIAM BEAUMONT.

²⁰ In 1810 had a population of 3,112

²¹ A careful search of the newspaper files and other old sources of information failed to reveal the real nature of "The Forum." There was, however, organized in Plattsburgh in December, 1816, a "debating society," "not intended to be an opposition to any society of like nature, but to endeavor to obtain a union of all," etc. This may have been "The Forum."

He evidently established as lucrative a practice as the community afforded at that time, and executed, as had been his custom in the army, careful records of his observations in private practice. I find among the papers, for instance, a "Medical and Physical Journal, commenced November 1, 1818, in the sixth year of my medical practice," in which are recorded the histories of "Dr. B. J. Mooers," "Abel Stone's Wife," "Old Mrs. Battiste," "Miss M. Sela, age 8 years," "Mr. L. Ransom's child, age 1 year," "Mrs. Wheeler, wife of Mr. Zebh. Wheeler," and many others.

In the case of his friend and colleague, Dr. B. J. Mooers (page 72), he describes "a severe attack of fever, with acute pain in the head, back, and loins, irregular chills and acute exacerbations of fever, great superficial heat, dry skin, high arterial action, and great thirst." On finding his patient in this condition, he deemed it wise to bleed him, but says, "Finding him rather averse to V. S. [venesection], and feeling a little courteous, I did not urge the operation, but deferred it six hours (to his prejudice, no doubt)." On returning in the evening, and finding that "20 grains of calomel and cold vinegar to his head" had given no relief, he insisted on his favorite remedy, and "at 6 o'clock on the same evening took 16 ounces of blood."

The case of Mrs. Wheeler is of sufficient interest to be reproduced here in part, dealing, as it does, with a case of supposed hydrophobia and a unique method of treatment.

Mrs. Wheeler, wife of Mr. Zebh. Wheeler, on the 8th of August, 1819, was bitten by a cat supposed to be rabid, at least had every appearance of being so, but was a strange cat and shot immediately after inflicting the bite. I was called immediately a distance of 4 miles, and arrived at the house in an hour or an hour and a half after she had been bitten. The wound being superficial upon the integuments of the right foot over the metatarsal bone, and the teeth not having perforated entirely the cutis vera, I extirpated the whole of the wounded part, leaving no vestige of laceration or even extravasation. The wound bled freely from a cutaneous artery, and was then dressed with leaves of the *Alysma plantago*²² and ordered to be kept constantly wet with salt, vinegar and

²² His knowledge of *alysma plantago* as a specific in hydrophobia was obtained from Billinge's *Liverpool Advertiser*, February 23, 1818, the clipping of which he had preserved very carefully. It read as follows: "Effectual Cure for Hydrophobia.—Of the long catalogue of these distempers with which it has pleased the Supreme Being to chasten or afflict humanity, the most violent, the most awful and deplorable is hydrophobia. This frightful malady, which bereaves of reason, distorts the frame, and humiliates the species by a change from human to brutal nature; whose paroxysms, increasing with their succession, in their tortures render the miserable sufferer too terrifying for sight—almost too hideous for sympathy; the malady which hitherto no skill could control, no force restrain, no medicine relieve, at length yields to a simple member of the vege-

water. A dose of Calomel 10 grs. was administered at evening and prompted by another with Rhei in the morning. . . . The sore in 3 or 4 days became inflamed, much swollen, and quite painful, with a general febrile habit of the system; the tongue coated, with pain in the head; nausea and foul stomach, indicating an emetic, which on about the 5th day was administered, operating well and relieving the patient of all febrile symptoms. The charcoal poultice with yeast was applied to the foot and sore during its swollen state at night, sometimes alternated with carrots, and dressed with calomel and carbon on the surface of the sore in the day time. . . . The wound had cicatrized nearly over by the 4th week, and she felt herself quite safe. . . . On or about the 10th of Sept. she experienced some singular sensations and called on me to describe them. She said she had within a day or two felt sharp, twinging pains in the sore and about her foot, running up the limb of that side; sharp, piercing pains through her head from one temple to the other, shooting into the back part of her head and down her neck and shoulder; a sense of suffocation in her throat, a swelling of the muscles of the neck. On the 10th, when she came to me, there was a wild, glary appearance in her eyes and confusion of countenance, although she was perfectly composed and rationally sensible of her situation. The sore on her foot had ceased to discharge and was of a dark, livid color. Being somewhat alarmed myself at these appearances, I did not omit a moment in urging her to the use of the most sovereign means to divert the approaching symptoms of Hydrophobia. I directed her to return home immediately; gave her a cathc. of Calomel, with directions to take it at night; to apply the charcoal or carrot poultice, and to keep the surface of the sore covered with calomel. Having discovered a few days before the *Scutillaria lateriflora*,²³ I gave her some, with directions to make a strong decoction and drink a gill morning and evening, and to make use of a mild decoction of it for common drink through the day, and to keep the sore washed with the same.

table world—a quick, but effectual, antidote, the complete and general discovery of which Providence, in its wisdom, has reserved for the present time.” Then follows the story of a Russian peasant who was the sole depository of a secret remedy for this terrible distemper. While traveling to a distant village he came upon a hamlet which was in a great state of commotion on account of a case of hydrophobia. Being unprepared for such an emergency, he felt compelled to sacrifice self-interest for humanity's sake, and directed a search to be made for the *alysma plantago*. He described it to the inhabitants of the village, and they forthwith discovered it in the immediate neighborhood. The distempered man was cured, and the famous remedy thus became known to the world. The article contains a careful description of the plant and an illustration of it. It proves to be nothing more than the common water plantain.

²³His ability to search out the various plants from which to make his drugs naturally presupposes some knowledge of botany. In this connection it may be stated that in a previous biography (Dr. J. R. Bailey, Physician and Surgeon, December, 1900, page 574) he is said to have spent part of the time from 1815 to 1819 in Maryland and made valuable contributions to the science of botany and geology. A careful search, however, of the records contained in the libraries of Johns Hopkins University and the Missouri Botanical Gardens by authorities on these subjects has failed to reveal evidence of any such contributions. An effort was made to locate manuscripts of Dr. Bailey which might give the source of his information on this point, and through the kindness of Mrs. Bailey I was given access to his library and papers at Mackinac, but nothing bearing on the subject was found.

Then follow daily notations on the case, of which the following are examples:

Sept. 13th. Feels more comfortable than she has for several days; the symptoms recurred again at night, and continued from about 12 till 6 or 7 o'clock in the morning, and were abated by drinking freely of the *Scutillaria*, as reported by the people. Appeared mild and easy in the afternoon when I saw her. . . .

Sept. 15th. Symptoms recurred again last night at usual hour, violent as ever; feels more unwell today than ever, owing perhaps to the alterant effect of the calomel producing ptyalism. The cal. and Rhei not having moved the bowels, gave 1 oz. oil at 5 P. M. and directed an enema at 7. . . .

Sept. 18th. Did not see her this day, her husband reporting no effect from the infusion of day before. I gave him Gum Guaiac and Magnesia $\bar{a}\bar{a}$, with directions to give her a teaspoonful of the powder every three hours until it should operate a physic, and to continue the use of the tea. . . .

Sept. 25th. Saw her this day. She continues convalescent; sore completely cicatrized, symptoms all subsided. Continued the tea, and directed the Guaiac and Magnesia to be repeated once or twice a week *pro re nata*.

Oct. 20th. Perfectly recovered and enjoys as good health and Spirits as usual.

Beaumont's name was presented for membership in the Clinton County Medical Society the latter part of 1818, and the minutes record the following:

January 19, 1819, the society met at the house of Edward Hunter,²⁴ innholder, and adjourned to the house of Simon Newcomb.²⁵ Drs. William Beaumont and R. P. Allen presented their credentials, and were admitted members of the society.

This society has been a very active one from the time of its organization up to the present day. It came into existence on October 6, 1807, when "eight physicians and surgeons of Clinton county met at the house of Israel Green, innholder in Plattsburgh, to organize a medical society." Thereafter the meetings were held at regular intervals at the various village taverns, and showed evidence of much interest in medicine in its broadest sense. I find in the minutes such notations as the following:²⁶

²⁴ The house of Edward Hunter was situated on the corner of Broad and South Catherine streets, a portion of which still stands.

²⁵ The tavern of Simon Newcomb stood on what is now the corner of Cornelia and Miller streets, and was occupied by the British soldiers at the time of the siege of Plattsburgh.

²⁶ "Three Centuries in Champlain Valley," by Mrs. George Fuller Tuttle; "History of Clinton and Franklin Counties, New York, 1880," J. W. Lewis & Co., publishers.

January 19, 1809, the annual meeting of the Clinton County Medical Society was held at the house of Israel Green.²⁷ Dr. Waterhouse, of Malone, read a surgical dissertation. Thanks and \$18.80 for expenses were voted to Dr. Horatio Powell, of Malone, for attendance at the meeting of the State Society. . . . It takes a gentleman to keep a country inn, and Friend Green is the very man for it.

January 15, 1811, met at the house of Edward Hunter, innholder in Plattsburgh, when it was decided to send a delegate to the State Society, and five men were fined one dollar each for non-attendance.

August 16, 1813, a soldier was hung, and his body delivered to the President of the Clinton County Medical Society for the use of said Society.²⁸



An advertisement in the *Plattsburgh Republican*, February 20, 1819, requesting the return of a sand box.

Among his contemporaries in the practice of medicine at Plattsburgh was his cousin, Samuel Beaumont, to whom we shall have occasion to refer often in later chapters. He is said to have read medicine under the direction of his cousin William between 1815

²⁷ The ancient inn of Israel Green stood on the corner of Bridge and Green streets.

²⁸ In this connection the following extracts from "reminiscences" appearing in the columns of the *Plattsburgh Republican* are of interest: "I remember," writes Mr. John W. Bailey, "when my brother William kept a store on the corner of Margaret and Bridge streets, in the old wooden building which stood where Mr. Cady keeps store now. There was a cellar kitchen there, with an entrance from the east, with a large fireplace. Dr. Beaumont had an office there, and after some murderer was executed here the body was turned over to him, and I remember being there and seeing him arranging it for the skeleton, and seeing it hung up by this open fireplace in the kitchen to dry out like a piece of mutton. I never knew what became of this skeleton." Of this skeleton, however, we have another glimpse a few years later. It went with Dr. Beaumont to the home of his future father-in-law, the famous Quaker Innkeeper, as we learn from Dr. Beaumont's niece in her description of the "Ancient House," where the skeleton found sanctuary. She says: "Just across the narrow corridor was a staircase to an unfinished attic, with a closed door. On the lower platform of the stairs, one step raised, stood two skeletons—one in armor of dark-red arteries and bright-scarlet veins, the other a stark curio of naked bones. These were subjects turned over to Dr. Beaumont by Judge Ambrose Spencer as anatomical studies. Whatever they may have been in life, I can not tell. Scarecrows they were to children and servants for a full decade."

and 1819, received his license to practice from the Clinton County Society,²⁹ and became a member in 1820, continuing in practice here for many years thereafter. He was a favorite cousin of the doctor's, and proved of the greatest assistance to him in after years.

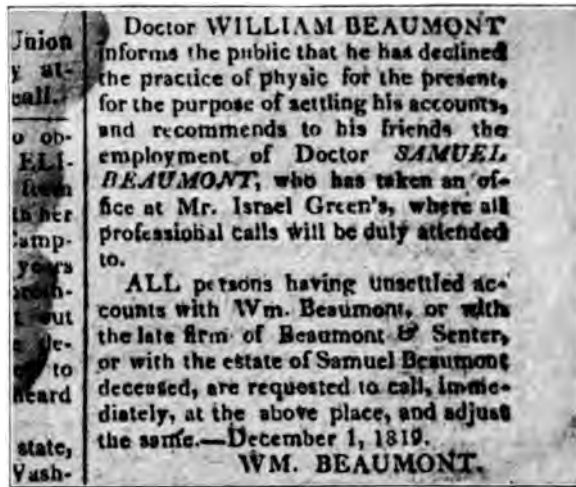
It is interesting to note at this point that some of the meetings of the medical society were attended by a bit of sentiment on the part of one its members. "Friend Israel Green, innholder in Plattsburgh," was destined to become the future father-in-law of William Beaumont, and already an everlasting attachment had sprung up between the young surgeon and Green's daughter, Deborah Platt. The Greens were Quakers of much culture and refinement, and descendants of General Nathaniel Green of revolutionary fame. Israel's tavern played an important role in these days, and was the center of political, social, and professional life in the village. While there were a number of hostleries in Plattsburgh—McCreedy's, Newcomb's, Hunter's, and others—the greatest honor seemed attached to being "one of that group of men who were wont to gather in good fellowship at the inn of Israel Green." It was here that balls were given by the smart set, lodge meetings were held in the attic, and congenial souls gathered in the evening about the large wooden tables to discuss the many topics of local and national interest that were confronting them. It was at this tavern that President Monroe was welcomed by the eloquent Reuben H. Walworth after his path into the hostelry had been strewn with flowers by the "young ladies from Miss Cook's and Miss Forrence's schools," and here it was that young Beaumont carried on his successful courtship. Israel and Sarah Green had two daughters, Anna and Deborah. The former became the wife of Colonel Melancthon Smith,³⁰ a man of great power and prominence in northern New York in his day, while the latter, then a young widow, became the object of the Doctor's affections. She was evidently a young woman of much culture and great strength of character, generous, genial, industrious, sympathetic, and endowed with physical beauty. During the war through which they had just lived she was not inactive, but "moved like a ministering angel in devoted care and

²⁹ Biography of Samuel Beaumont. (Plattsburgh Sentinel Annual, 1893.)

³⁰ Colonel Melancthon Smith was a man of affairs in this community. He was commander of Fort Moreau in the defense of Plattsburgh in the War of 1812, and the first editor of the *Plattsburgh Republican* in 1811. He died at 38 years of age, and was buried with great military honors, leaving a young widow and a daughter, Elizabeth, one year old.

faithful nursing, or seated by the bedside of those doomed to die. Her strong fortitude and gentle sympathy gave encouragement and hope to many a stricken household throughout her native village; a woman in every way fitted for the future in store for her, full of sacrifice and full of success."³¹

Though happy in the midst of such professional and social ties, Beaumont was discontented, as is so often true of those who have once felt the thrill of war. The call of the army seemed ever to be ringing in his ears. There had recently been a complete reorgan-



An advertisement in the *Plattsburgh Republican*, December 1, 1819, announcing the discontinuance of practice.

ization of the medical corps of the army, and his friend and military comrade, Dr. Joseph Lovell, had been chosen surgeon-general. Though Lovell was not yet thirty years of age, he had shown, in his able reports as hospital surgeon and medical director of the northern division, mature thought and a keen understanding of the medical needs of the army. He proceeded at once to surround himself with a corps of capable assistants, and showed his high regard for Beaumont's ability by offering him a position in the surgeon-general's office. The first of Beaumont's letters³² on file in the depart-

³¹ Clipping from a Green Bay paper (no date) of an article by Mrs. Elizabeth Smith Martin.

³² Victor C. Vaughan. (*Physician and Surgeon*, December, 1903, page 544.) A careful search of the files of the surgeon-general's office made by me in May, 1911, failed to disclose the original letter.

ment, dated at Plattsburgh, December 18, 1818, expressed thanks for the offer of a \$1,000 clerkship, which on first thought he accepted, but afterward declined. Clerical work was not compatible with his ideas of activity. The new order of things, however, rendered active service in the medical corps of the army much more attractive than it had been during the years of his previous service. He had already been commissioned surgeon of the Fifteenth Regiment of cavalry of the New York militia by Governor DeWitt Clinton on April 6, 1819. Beaumont had always remained a staunch anti-Federalist, and was naturally a great admirer of Governor Clinton. In an issue of the *Plattsburgh Republican* of about this period his name appears in a list of 300 indorsing Clinton's administration and urging his reelection. With the establishment of the new grades in the regular army, he made application for readmission to the service. He evidently received prompt assurance of favorable action on his application, for on December 1, 1819, through the columns of the *Plattsburgh Republican* he "informs the public that he has declined the practice of physic for the present for the purpose of settling his accounts, and recommends to his friends the employment of Dr. Samuel Beaumont, who has taken an office at Mr. Israel Green's, where all professional calls will be duly attended to."

He was commissioned by President Monroe on March 18, 1820, post surgeon of the army, to take rank, however, from December 4, 1819. He was immediately ordered to Fort Mackinac, on the north-western frontier, where he was to report once more to General Macomb, under whom he had served valiantly at the battle of Plattsburgh. He bade adieu to the strong ties of love and friendship which he had formed on the shores of Lake Champlain, and returned for a short visit to his relatives in their country home in Connecticut.

Medical & Physical Journal, commenced
 November, 1st 1818, in the 26th year of
 my medical & surgical practice. —
 Doctor Caldwell regularly & regularly consulting
 from a very severe attack of ^{the} River, under
 the following treatment — Attack — violent at 1st
 midnight, after some considerable previous indispo-
 sition, with ~~severe~~ pain in the head, back
 & limbs — irregular chills. Exacerbation of fever
 great — superficial heat — dry skin. His arterial
 action & pulse that ~~causes~~ is ~~great~~ and
 morning & evening — finding him rather anxious
 to visit & feeling a little ~~anxious~~ — I did not give
 the opiate, but ordered it — I lowered to hyposphie
 no doubt gave him 20 grs. Cal. ~~at 4th~~
 applied cold vinegar to his head, for commencing
~~disorder~~ — cold opiate at 4 P.M., gave

& gave an Emetic. Pain relative. Through the
 night - entire bow - next day pain returned
 with the fever on the next time about 10
 o'clock - Emission high through the day next
 the temperature of skin & pulse & sleep
 near normal - & constant sweating with eructing
 much of air - third day - anticipated the
 Cholera. & gave an Emetic of Castor - 8 grs
 Col. followed in an hour by 10 grs of Sugar
 given by teatles. 10 minute intervals - promoted by
 drinking freely of Gravel & Cham. flav. tea -
 operated well - gave much water & salt
 of the volume of pers. for the day - sleep
 through the night - fever resumed at the usual
 time with high temperature & pulse & heat

The first page of a "medical and physical journal" commenced by Beaumont in 1818, in the sixth year of his practice. (Size of original, $7\frac{1}{2}$ by 12 inches.)

CHAPTER V.

1820-1822.

The details of his journey to the northwest have been narrated in his characteristic style in a "Traveling Journal from Plattsburgh to Mackinac, 1820," which has come down to us in an excellent state of preservation:

May 6th, 3 A. M. Left Plattsburgh in the steam Boat Congress, and the people enjoying the refreshing influence of "Nature's Sweet restorer, balmy sleep" (excepting a few, whose anxiety was too great). Passed very pleasantly on by Burlington, Vt., Essex, N. Y. Saw Miss Deming & Miss French on the dock, but could not speak to them. Passed up by Crownpoint, Ticonderoga, Northwest Bay, Basin Harbor to Whitehall. Stopped at Rocks; viewed the big ditch and Locks. Took post coach for Albany 5 ok. morning. Capt. Ezra Smith, Misses Chart. Taylor, Mary Angus, Peters and Fish in company. Arrived at Sandyhill at 10 ok. A. M. Saw Mr. Rogers, Uncle Josiah, and Aunt Clariss; all well. Took breakfast, attended forenoon church. Dined (Mr. Roger with six) at Beard's. Took Post Coach at 1 ok. and proceeded on down the North River, through several most delightful Towns, to Watertown, Lansingburgh, Troy to Albany, where we arrived about 8 ok. in the evening. The ladies almost overcome with fatigue. Supped and retired.

Miss Peters and Fish took stage for Pittsfield, Mass., at 3 ok. A. M. Miss Taylor and Angus took Steam boat for New York at 9 A. M. I remained in Albany till next morning at 3 ok., and took stage for Hartford, Connct., and arrived there at 8 ok. P. M. Stopped at Morgan's Stage House. Found them all well and in good and easy circumstances. Staid 36 hours, and took my mother and went to New London. Saw Lucretia, Ann and Abel. All well, and staid 18 hours, and went on to South Kingston in Rhode Island to see my sister. Found her well and happy, I believe. Staid 12 hours and returned. Nothing of consequence has yet arrived, and finally I don't believe there will worth taking the trouble to record before I get to Mackinac—so I will stop writing.

Took passage in the Canal Boat Western . . . from Whitesburgh, 4 miles from Utica, and proceeded through the big ditch to Macedonia, 7 miles from Auburn.

A more useful and stupendous work could not have been conceived, planned and put into execution than this canal. To see navigable streams diverted from their natural course and carried through the heart of an inland country for hundreds of miles by means of man, and upon which glide, in easy, quick, and uninterrupted course, boats of almost any burthen upon a perfect plane or level, except now and then a Lock, astonishes a reflecting beholder, and excites a solemn reverence—even for the inge-

Travelling Journal
 from Plattsburgh to
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 -

The first page of Beaumont's "Traveling Journal" from Plattsburgh to Mackinac, begun May 6, 1820.

nulty and perseverance of Man. The Great Western canal diverts the Navigation of the Western Lakes and waters from its natural course down the St. Lawrence to Canada, and from there to the ocean, and brings it through the most of our Western States into the North River to New York and then into the ocean. Nothing can be pleasanter than

to pass through the canal in the passage boats, for you have nothing to disturb the most pleasant feeling, being perfectly safe from every apprehension of danger of any kind, gliding smoothly along upon the surface of Still water at the rate of 5 miles and through a most delightful country, in plain view and mostly through young lands and flourishing villages, rich and well-cultivated farms, covered with a luxurient growth of cultivated vegetation, lofty forests, and well stocked with rich herds of cattle. Should the canal be completed upon the contemplated plan and carried through from Lake Erie to Albany, it will convert the once western wilds into a cultivated garden—it will be like a living stream through the midst of a yard. May heaven avert any and everything like political interruptions to so noble, grand and useful an undertaking.

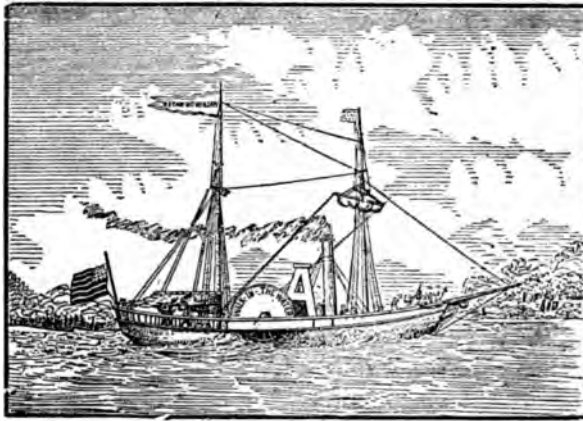
Arrived at Auburn, a very pleasant and flourishing town, 7 miles west of the Canal, at 3 o'clk. P. M. on the 25th inst. In this place a States prison is building of stone and iron, with a very large yard, which encloses about 3 acres, and the wall built of solid stone 12 or 15 feet high and 4 feet thick. There were about 200 convicts in the prison at this time. I visited the prison in company with Mr. White, of Rome. Went all over and examined it throughout; could but admire the cleanliness, order and good condition of the prisoners and overseer. Visited the United States arsenal at Rome; found it in very neat order. Visited Hamilton College, Clinton, a most delightful site in Auburn. Saw an elephant 14 feet high and every way in proportion, also a Magot, a Leopard and two monkeys. Left Auburn at 4 o'clk. A. M.

26th. In stage to Buffalo. Passed through Cayuga, crossed the Lake over a bridge a mile long; Geneva, a very pleasant and flourishing town, Waterloo, Avons, Canandaigua, Bloomfield, Geneseo, Clam, Batavia and Williamsville, all very pleasant and flourishing towns, to Buffalo.

27th, 6 A. M. At Canandaigua the Rev. Dr. Morse and son came on board the Stage, from whom I anticipate deriving much benefit and instructions, as we shall probably proceed together to Mackinac, he being on a mission among the Indians of the Country—West and Southwest, etc. Arrived at Buffalo on Saturday, 27th Inst. Remained at the place over Sunday. Attended church. Heard young Mr. Morse preach, or rather tried to hear him. Saw Mrs. Goodsell, formerly D. Day; took tea with her at an old acquaintance.

Monday morning, 29th. Started from Buffalo. Went to Black Rock, two miles, in company with Dr. J. Morse and son. Crossed over to Waterloo, U. C., and proceeded to the Falls of Niagara, through Bartle Chippewa, viewed the field of Battle. Passed on to Bridgewater, & viewed the Battle ground at Lundy's lane. Dined at Wm. Forsyth's. Viewed the Falls above and below on Canada side; crossed over and viewed below and above on the American side; crossed back and proceeded to Queenstown heights. Viewed the Garrison, composed of a Sergeant's guard and 14 men. Crossed the Ferry at Queenstown over to Lewiston. Called on B. Cook, Esq., and his father's family; staid over night. In the morning came up on the American side to the falls; viewed what is called Devil's

hole, about half way between Lewiston and the falls. It consists merely of a transverse fissure or excavation in the perpendicular banks of the River, about 150 feet high; of no other extraordinary appearance than a hideous precipice, with a confused mass of stones, dirt, and trees lying at the bottom. Came to the falls and crossed over the famous bridge built by Judge Porter across the rapids just above the falls, extending onto Deer Island in the middle of the river and just above the precipice. Viewed the island as thousands have before. Saw the perfect Rainbow about 9 o'clock in the morning; also saw it in the evening before on the opposite side. Came from the falls to Blackrock on the American side. Went on Board the Steam boat *Walk-in-the-water*¹ for Detroit, May 30, 4 P. M.



"Walk-in-the-Water," built in 1818, and came to Mackinac in 1819. (From a wood cut in "Annals of Fort Mackinac," by Dwight H. Kelton.)

31st. Got under way at 9 o'clock this morning. Fair wind and pleasant weather; go at the rate of nine miles an hour. Looking over an old newspaper, came across Doct. Franklin's "project for attaining moral perfection,"² to wit:

"It was about this time I conceived the bold and arduous project of arriving at moral perfection. I wished to live without committing any fault at any time, and to conquer all that either natural inclination or custom might lead me into. As I knew, or expected I knew, what was right and wrong, I did not see why I might not always do the one and avoid the other. But I soon found I had undertaken a task of more difficulty than I had imagined; while my attention was taken up and care employed in guarding against one fault, I was often surprised by another habit which

¹ First steamboat on the Upper Lakes.

² Doctor Franklin's project is reproduced in full, first, because it is unique, and, second, because Dr. Beaumont was so favorably impressed with its logic that he afterward adopted the same plan.

took the advantage of inattention. Inclination was sometimes too strong for reason. I concluded at last that the mere speculative conviction that it was our interest to be completely virtuous was not sufficient to prevent our slipping, and that the contrary habits must be broken and good ones acquired and established before we can have any dependence on a steady, uniform rectitude of conduct. For this purpose, therefore, I tried the following method:

"In the various enumerations of the moral virtues I had met with in my reading, I found the catalogue more or less numerous, as different authors included more or fewer ideas under the same name.

"Temperance, for example, was confined to eating and drinking; while by others it was extended to mean the moderating of every other pleasure—appetite, inclination or passion, bodily or mental, even to our ambition. I proposed to myself, for the sake of clearance, to use rather more names, with fewer ideas annexed to each, than a few names with more ideas; and I included under 13 names of virtues all that, at that time, occurred to me as necessary and desirable; annexed to each a short precept which fully expresses the extent I gave to its meaning.

"These names of virtues, with their precepts, were: (1) Temperance—Eat not to dullness, drink not to elevation. (2) Silence—Speak not but what may benefit others or yourself; avoid trifling conversations. (3) Order—Let all your things have their place; let each part of your business have its time. (4) Resolution—Resolve to perform without fail what you resolve. (5) Frugality—Make no expense but to do good to others or to yourself; i. e., waste nothing. (6) Industry—Lose no time; be always employed in something useful; cut off all unnecessary actions. (7) Sincerity—Use no hurtful deceit; think innocently and justly, and, if you speak, speak accordingly. (8) Justice—Wrong none by doing injuries, or omitting the benefits that are your duty. (9) Moderation—Avoid extremes; forbear resenting injuries so much as you think they deserve. (10) Cleanliness—Tolerate no uncleanness in body, clothes, or habitation. (11) Tranquility—Be not disturbed at trifles, nor at accidents, common or unavoidable. (12) Chastity—Rarely use venery, but for health or offspring; never to dullness or weakness, or the injury of your own or another's peace or reputation. (13) Humility—Imitate Jesus or Socrates.

"My intentions being to acquire the habitude of all these virtues, I judged it would be well not to distract my attention by attempting the whole at once, but to fix it on one of them at a time; and when I should be master of that, then to proceed to another, and so on till I should have gone through the whole 13; and as the previous acquisition of some might facilitate the acquisition of certain others, I arranged them with that view as they stand above. Temperance first, as it tends to procure that coolness and clearness of head which is so necessary where constant vigilance was to be kept up and a guard maintained against the unremitting attraction of ancient habits and the force of perpetual temptations. This being acquired and established, Silence would be more easy; and my desire being to gain knowledge at the same time that I improved

in virtues, and considering that in conversation it was rather obtained by the use of the ear than of the tongue, and therefore, wishing to break the habit it was getting into of prattling, punning, and jesting (which only made me accessible to trifling company), I gave silence the second place. This and the next in order I expected would allow me more time to attend to my project and my studies.

"Resolution, once becoming habitual, would keep me firm in my endeavor to obtain all the subsequent virtues. Frugality and industry, relieving me from my remaining debts and producing affluence and independence, would make more easy the practice of sincerity and justice, etc. Conceiving that, according to the advice of Pythagoras in the golden verses, daily examination would be necessary, I contrived the following method of conducting that examination:

"I made a little book in which I allotted a page for each of the virtues. I ruled each page with red ink, so as to have seven columns, one for each day of the week, marking each column with a letter for the day. I crossed these columns with 13 red lines, marking the beginning of each line with the first letter of one of the virtues, on which line and in its proper column I might mark, by a little black spot, every fault I found upon examination to have been committed respecting that virtue upon that day.

"I determined to give a week's strict trial and attention to each of the virtues successively. Then in the first week my greatest guard was to avoid even the least offence against temperance, leaving the other virtues to their ordinary chance, only marking every evening the fault of the days. Thus, if in the first week I could keep my first line marked T clear of spots, I supposed the habit of that virtue so much strengthened, and its opposite so much weakened, that I might venture extending my attention to include the next, and the following week keep both lines free from spots. Proceeding thus to the last, I could get through a course complete in thirteen weeks and four courses in a year.

"And like him who, having a garden to weed, does not attempt to eradicate all the bad herbs at once, which would exceed his access and his strength, but works on one bed at a time, and, having accomplished the first, proceeds to the second, so I should have, I hoped, the encouraging pleasure of seeing on my pages the progress made in virtue by clearing successively my lines of their spots, till in the end of my numbered courses I should be happy in viewing a clear book after a 13 weeks' daily examination."

On the morning of May 31st left Black Rock, passed up by Fort Erie on Canada Side and Buffalo on the American, also the Towns of Erie, Grand river, Cleveland, Sandusky and Put-in-Bay, near where the naval Battle between the British and American fleets was fought in 1818 and victory gained by Com. Perry. Passed by Malden (C. side), ascending the Detroit river.

The Fort at Detroit is a regular work of an oblong figure, covering about an acre of graceful [slopes]. The parapets are about 20 ft. in



Fort Michilimackinac in midwinter, showing one of the block-houses, with the surgeon's quarters and hospital to the left of it.

height, built of earth and sodded, with 4 bastions, the whole surrounded with palisades, a deep ditch and glacis. It stands immediately back of the Town and has strength to withstand a regular siege, but does not command the river. There are now — troops stationed there under the comd. of —.

June 3d. Rode down to the spring wells and crossed over to Sandwich, a small French village about three miles below Detroit.

Fort Michilimackinac is handsomely situated on the S. E. side of the island of this name on a buff rock, rising from 100 to 200 feet from the water, almost perpendicular in many places, extending about half way round the island. It overlooks and of course commands the harbor, a



One of the block-houses at Mackinac, built by the British in 1780. (From a wood cut in "Annals of Fort Mackinac," by Dwight H. Kelton.)

beautiful, semi-circular basin of about one mile in extent and from 1 to 5 or 6 fathoms in depth, and sheltered from Lake Huron by two islands stretching across its mouth, and leaving only a narrow channel by which to enter the harbor. There is a rise of ground in the rear of the Fort, on which is built a stockade, defended by two Block houses and battery in front. There is a bomb proof Magazine in the fort.

This Island (Mackinac) is seven and a half miles in circumference. It is highest in the center, handsomely crowning, resembling as you approach it at a distance a turtle's back, which gave name to the Island—Michilimackinac signifies Turtle. The ground on which the fort stands is 150 to 100 feet above the level of the Lake and 100 yards from the Shore. It is neatly built, and exhibits a beautiful appearance from the

water. On the N. E. side near the Shore, and 80 feet above the lake, is an arched Rock, 20 ft. in diameter at top and 30 at the bottom or base. Near the center of the island, on a plain, stands an isolated conical rock in the form of a sugar loaf 30 feet in height, which is perforated in various places, and the holes are filled with human bones. In another part of the island is a rock called the skull rock, which exhibits a similar appearance.

June 3d. Reported to Genl. A. Macomb. Recd. his invitation to dine with him; accepted. Saw Mr. Hatch, from Burlington, Vt., formerly in the U. S. Quarter Master's Department. Introduced to the Rev. Mr. M., a clergyman of this place; introduced to Capt. Cross, formerly of the U. S. Arty., now an atty. of Kaskaski, Illns. Territory. . . .

June 3d. Visited the Cantonment. Found appearances rather indifferent. Observed very stormy symptoms of dissipation among the officers of the Garrison.

June 4th, Sunday. Attended Presbyterian church in the forepart of the day; heard a discourse from the Rev. Dr. Morse. Dined with Capt. Hatch. Attended the Catholic Church in the afternoon; witnessed the great annual ceremony of the celebration of our Saviour. . . .

June 5th, Monday. Nothing worthy noting today. Wrote a letter to the Surgn. Genl. for permission for private practice at Mackinac.³ Wrote what I called a friendly letter to Miss Charlotte Taylor. Steam boat left for Black Rock 4 oclock P. M. Gave Capt. Jos. Cross, late of U. S. A., now a lawyer of Illinois Ter., a letter of recomn. to Mr. Switland, of Plattsg. Accidentally came across a new Poem by Samuel Wadsworth Called "The Poems, odes, songs & other matricular effusions of Samuel Wadsworth, Author of 'The Champion of Freedom,'" etc. [?] Spent the evening in perusing the work; it is a very interesting publication, and highly worthy to be read in my humble opinion, and from which I extract the following lines as very applicable to my feeling, to wit:

"When Fate's stern fiat dooms fond friends to part,
What thrilling pangs pervade the feeling heart!
With ardent glow the proffered hand is press'd,
While the moist eye bespeaks the aching breast;
The final gaze, we linger, still renew,
Dreading the last, the painful word, Adieu.
So I, a bird of passage, wont to rove, [roving]
Have oft been doomed to leave thousands loving,
Have oft been fated to endure the smart
Which now afflicts my lacerated heart;
That heart, alive to every firm glow,
Enrapturing joy, or ecstasy of woe."

³To this Surgeon-General Lovell replied: "Secretary of war has no objection to your giving your professional services to the sick of Mackinac, provided it does not interfere with your official duties. They can not, however, be furnished from the public chest."

June 6th, Tuesday. Saw Aunt Mary Hunt, as we used to call her when she lived with Col. Snelling. I had not thought of her (not knowing she was here) until she came out of a house and spoke to me as I was passing. She was a little embarrassed at the thought of being seen to hail me as I passed, but only seemed to heighten her beauty. She blushed like the rose. So crimson was her youthful cheek that it made even the sun look pale. She was very glad to see me and hear from her friends in Platt., after whom she made much inquiry, especially Aunt Debby & Mr. Green's family. I staid 30 minutes, and left her still blushing. Perused Alex. Mackenzie's travels principally today, from which are made the following Knisteneaux Indians' names of the months. . . .

June 14th, Wednesday. Nothing of consequence transpired for 10 or 12 days past. Spent my time principally in reading; writing some for Revd. Dr. Morse; drew off several maps. Dined in the Cantonment 2 or 3 times. Made a few acquaintances and less visits.

Started this morning at 4 ock. in the Steam Boat Walk-in-the-water for Fort Michilimackinac. Had on board Genl. Macomb, Col. Wool, Revd. Dr. Morse and many other gentlemen. Had a fine breeze and fair weather, a thunder shower between 12 & 1 ok. Adopted the following maxim this day: "Trust not to man's honesty, whether Christian, Jew, or Gentile. Deal with all as though they were rogues and villains; it will never injure an honest person, & it will always protect you from being cheated by friend or foe. Selfishness or villainy, or both combined, govern the world, with a very few exceptions." At sunset arrived at the lower end of Lake Huron, where the boat anchored for the night. Here stands Fort Gratiot, a handsome little Fortification erected since the (Oh! D—, my heart a vacuum feels, your image only I can see; and wheresoever my body reels, my spirit wings its way to thee) war on a beautiful site. Attended the Insps. Genl. Col. Wool on his inspection of the troops of this post. Saw Mrs. Julia Hunt, and returned on board the boat. Got under way at 3 ok. next morning, and passed through Lake Huron, and arrived at Mackinac on the 16th of June 10 ok. eve.

17th. Attended the Inspection of the Troops at this Garrison with Genl. Macomb and Col. I. E. Wool. Dined with Capt. Pierce.⁴

18th. Assumed the charge of the Hospital and commenced duty in U. S. Service.

19th to 27th. Nothing extraordinary occurred during this time. Obtained 2 horses of Capt. Pierce, and procured a private waiter on the 26th Inst. . . . My thoughts are nightly, and every night and all the night, with thee, and faithful servants are they to the little divinity of Love. Morpheus sends them flying—fervent, faithful messengers of sleeping thoughts—to bear my love to you. Oh, how long doth seem our separation. Anxious indeed am I to know our final prospects. Were our present happy anticipations to be destroyed, & our hopeful hearts, sustaining prospects, cut off, oh, how cheerless, difficult and desperate would be

⁴Capt. B. K. Pierce, brother of President Franklin Pierce, and commandant of Fort Mackinac. ("Reminiscences of Early Mackinac," by Miss Baird.)

Sept 162 on Commencement
 as the way of conduct on
 Dr Franklin's plan for
 attaining all moral perfection

Picking Shakespeare to
 day. I changed the following
 extract worth copying—

"Love all, trust a few,
 Do wrong to none: be able
 for thine enemy, rather in
 power, than in need; & keep
 thy friend under thy left
 eye: Be a chameleon for silence,
 but more ~~than~~ for speech?"

10 Rose at 6 O'Clock, visiting my
 part in village, & discharged
 Garrison duty before 9 O'Clock
 A.M. settled my hosp^l affs
 with Com^{rs}. & planned lecture
 & Pops Essay on man till ev-
 ing. Letter from Platts &
 spoke the evening in happy
 humor & fervent thankfulness
 retired at 10 P.M. with
 only 2 letters left on my table

A page of Beaumont's diary, on which he records having commenced Dr. Franklin's plan for attaining moral perfection.

the future scenes of life—a deadly banishment, a dark, benighted world!—
 a hopeless, Joyless life! Could I not think of you by day and dream of
 you by night, there would be no zest in life—no stimulus to act, no wish
 to live. You are the soul of my existence. For you I live, I think, I

act, and your dear image do I cherish with increasing fervency and love. . . .

Sept. 9th, 1820. Commenced a Diary of conduct on Dr. Franklin's plan for attaining Moral perfection.

Reading Shakespeare today, I judged the following extracts worthy of copying: "Love all, trust a few. Do wrong to none; be able for thine enemy, rather in power than use; & keep thy friend under thy life's key; Be checked for silence, but more taxed for speech."

10th. Rose at 6 ok. Visited my patients in village and discharged Garrison duty before 9 ok. A. M. Settled my hospital a/c with Comd. & perused scriptures & Pope's Essay on man till eve. Recd. letters from Plattsh. and spent the evening in happy perusal & fanciful . . . Retired at 10 P. M., with only two little blots on my book.

11th. Spent this day wholly in performing professional duties, principally with Capt. Knapp. Vaccd. Col. Boyd's infant.

The remainder of his diary of about twenty pages is devoted to extracts from various volumes which he was perusing, among them Autolycus' doleful ballads in Shakespeare's plays and Shakespeare's "King Henry," in which the following sentiment appeals to him greatly: "A man of sterling talents and pure integrity is a blessing to any people or community. A man of great talents without integrity is a dangerous pest to society. A man of true integrity with moderate talents is a useful member of a community. A man with neither talents nor integrity is a nuisance and calamity to any people." He then reviews in detail eight volumes of an account of the Christian religion in A. D. 30, at the end of which is found the statement, "The first mention made of the name Beaumont, as I discover, is in the history of Navarre, soon after the reign of Don John, emperor of Aragon, in about the year 1480, descended from the family of Gaston de Foix." Following this a number of pages are devoted to the consideration of Rollin's History and Homer's Iliad, and the last few pages can not be deciphered.

For several centuries Mackinac had figured in the traditions of the Indian, Jesuit missionary, *coureur des bois*, voyageur, and fur trader, and within the walls of the old fort, which occupied one of the highest points on the island, had mingled in years gone by "the red uniform of British soldiers, Canadian gray coats, and gaudy Indian blankets." This fort was one of the first objects of attack in the war in which our surgeon had been so busily engaged on the northern frontier, and in July, 1812, Lieutenant Hanks was compelled to report to General Hull that his little force of 57 men was

unable to make even the slightest effort to hold the position against "his Britannic Majesty's forces" consisting of about 300 whites and 700 Indian allies (Chippewas, Ottawas, Sioux, Winnebagoes, Menomones). But now the fort was again in the peaceful possession of four or five companies of United States troops, of which Beaumont was to be the sole medical adviser.

Upon his arrival here he promptly assumed the duties incumbent



North sally port of the old fort at Mackinac, forming the north gate. (From a wood cut in "Annals of Fort Mackinac," by Dwight H. Kelton.)

upon him, and took up his abode in the east end of the officers' stone quarters,³ erected by the British in 1780, took charge of the small one-story frame hospital and perfected its organization, with James Homer as steward and wardmaster and his wife as matron. The fort at this time lay within the intersecting lines of three block-houses, the only approach being through two arched sally ports, each of which was provided with a portcullis that could be dropped

³ Surgeons and assistant surgeons were ranked as commissioned officers in the matter of choice of quarters—surgeons next after majors, assistant surgeons of over ten years' service with captains, etc. The officer's stone quarters and the small frame hospital still stand, and are very well preserved. The latter, about 50 by 20 feet, consisted of two small wards, a vestibule, and a small kitchen.

instantly in case of attack. The walls were of stone and pointed cedar pickets, about ten feet high, tipped with three-pronged spikes wherever scaling was possible. There were rows of loop-holes, through which firing could be carried on when fighting off the enemy, and a few pieces of artillery were mounted in block-houses.

The medical officers were required at this time to make not only monthly reports as to the medical supplies on hand, cases in the



South sally port of the old fort at Mackinac, forming the south gate. (From a woodcut in "Annals of Fort Mackinac," by Dwight H. Kelton.)

hospital, etc., but a "diary of the weather" as well. Beaumont manifested considerable interest in his reports on weather conditions, as well as in the botanical specimens and geological formations which he found here. On September 30, 1820, for instance, he writes to the surgeon-general:⁶

I can not forbear expressing a deep sense of Chagrin at being under the necessity of transmitting the copy of such an imperfect, awkward and useless "Diary of the Weather," principally for a want of means of more accurate Thermometrical observations. The observations on the course

⁶ Files in surgeon-general's office.

of the wind and appearance of the Atmosphere have been accurately taken and correctly copied.

Being imperfectly acquainted with the science of Mineralogy, and destitute at present of the necessary means for accurately analyzing metallic ores, I take the liberty of transmitting to you for inspection the fragment of a large piece of composition that was dug up a few days since on the island in excavating the earth. Should you think it worthy your attention and find it to contain anything valuable, I should be highly gratified to receive the result of your examination and your opinion and advice on the subject. The small specimens in the small paper are not of the same kind with the other, but were contained in a crude piece of composition of metallic appearance found on the east Shore of the island



The officers' stone quarters at Mackinac, built in 1780. Beaumont occupied one end of the building and the commissioned officers the other.

and obtained in its present form by pulverizing and washing. I hazard not an opinion of the properties of either. Be they what they may, more of the same abounds on the island.

He never lost an opportunity to look after the welfare of the sick soldiers under his care, and to further the interests of the medical department in general. If he felt that the rights of his department were in any way being infringed upon, he would go to every extreme to prevent the injustice, and did not hesitate to express himself in unmistakable terms concerning the offender, no matter what his exalted position might be. A few months after his arrival in Mackinac, Major-General Macomb, at the request of the agent for Indian affairs for the district of Michilimackinac, was about to

turn over a portion of the public gardens within the military reservation for the erection of buildings for the use of the Indian Department. As soon as the matter was brought to Dr. Beaumont's notice he immediately wrote (November 1, 1820) to the War Department at Washington,⁷ inclosing a copy of General Maccomb's order:

Impelled by a sense of duty, as well as feelings of justice and humanity toward the sick under my charge, I can not withhold an exhibition of the inclosed order, the purport of which you will see, and which, if carried into effect, will wholly deprive me of the domestic means of rendering comfortable the invalids under my care, and, if not immediately corrected, will permanently infringe the rights and privileges, not only of the sick, but of the officers and soldiers of this Garrison generally.

The circumstances of the order, as far as I can learn, are as follows: Mr. George Boyd,⁸ simple Indian Agent and citizen of this district, after arriving here in the Spring, applied to Capt. B. K. Pierce, Comdg. officer of this Post, for a part of the public gardens for the use of the Indian Agency. Capt. Pierce, actuated by purely patriotic motives and principles of justice to his command, refused his request, and explicitly stated to him as his reasons that there was not ground enough in the whole public gardens to furnish the necessary vegetables for the use of the troops of this Garrison, agreeably with a Genl. Order from the War Dept. of Sept. 11th, 1818. Notwithstanding this, he persisted, it seems, in his unreasonable application until, through the undue influence of some person's representation not friendly to the officers of this cmd., or the Genl's impatience to get rid of his perplexing importunity, the order had been inconsiderately granted, regardless of opinion, feelings, comfort, or convenience of the officers or the Garrison, than which a greater injury or injustice of the kind could not be officially imposed. We verily hope that the Genl., after receiving the joint remonstrance of the officers of this post, will countermand his own order without any further trouble. I deem it expedient, however, to make the representation to you as the head of the Medl. Dept. (and to the Secy. of War, if you think proper to exhibit it), as I am in duty, as well as inclination, bound to protect the rights of soldiers and preserve the comforts of the sick whenever infringed.

⁷ Files in surgeon-general's office.

⁸ About a decade following this incident, Boyd was appointed Indian agent at Green Bay, M. T. In commenting on this fact, the author of "Historic Green Bay" gives a fair idea of the type of man with whom Beaumont had entered into competition: "In June of that year John Quincy Adams appointed to the position George Boyd, a Maryland gentleman of good colonial family, whose wife was a sister of Mrs. Adams. Colonel Boyd was a courtly and accomplished Southerner, fond of wine, good dinners, and the expensive luxuries of life. Household goods used in his Mackinac establishment, the tall silver candlesticks, oval mirrors in gilded frames, and handsome brasses, are a matter of wonder when one considers the wilderness through which they were transported and the rude, primitive dwelling they were destined to adorn." ("Historic Green Bay, 1634-1840," by Ella Hoes Neville, Sarah Greene Martin, Deborah Beaumont Martin, 1893.)

Depending upon the Heads of the respective Depts. for redress, I do most confidently expect it from your just and timely interposition if not immediately corrected by the authority from whence it originated. A lively interest & even indignation can not fail of being excited in every manly, just, liberal and reflecting mind on considering the nature of the aggrievance of which I complain and the injustice of its origin.

The ground contended for by Mr. Boyd contains one-half or more of all the public gardens of this garrison, which have been for twenty years or more exclusively appropriated to the use of the Military and by them alone brought to their present state of improvement and fruitfulness, principally, too, at the private expense and personal industry of the successive officers of this Post, and which even now, after so many years of incalculable labour to render them productive, is, from the circumscribed bounds and natural barrenness of the soil, insufficient to furnish the necessary supply of vegetables for the present number of troops at this garrison. What most particularly claims my attention, and in my humble opinion requires your interposing influence, is the deprivation it will be to the sick and invalids—that class of soldiers most essentially benefited by garden privileges—and the detriment it will be to the Medical Dept., inasmuch as it will take the whole of the Hospl. Garden of this garrison, which has been many years occupied and improved for that particular use, and without which the sick must suffer for want of many vegetable comforts not otherwise to be obtained on this Island. Should this garden be taken from the Hospl., another can not be selected on the public reservation of equal use and convenience, and it is securely inclosed with pickets, in the immediate vicinity of the garrison, within the view of the common and established sentinel, has been improved for a Hospt. Garden for many years, and is peculiarly adapted to the use of the sick, handsomely laid out into squares, walks, alleys, etc., with bowers of biennial and perennial plants, fruit trees, etc., besides the germs of other medicinal plants and ornamental flowers, the seeds of which I brought from the interior and have been at considerable trouble and expense to introduce into this garden for the future use of the sick.

Another reason why I feel tenacious of retaining this ground for the use of the Hospt. is that it contains the *Humulus Lupulus*⁹ (very difficult of culture in this country), and, I believe, is the only root or branch to be found on this Island, and which I have taken special pains to cultivate since my arrival here for the express purpose of making a healthy and pleasant beverage for the use of the sick and convalescents. I also intend introducing it among the well as a substitute for the use of whiskey, which, I believe, may be partially carried into effect if the garden be not taken from us.

I have likewise introduced the seed and am endeavoring to cultivate the *Papavar Somniferum*¹⁰ and the *Marrubium Vulgar*¹¹, which are very

⁹ Hops.

¹⁰ Opium plant.

¹¹ Horehound.

efficacious in many diseases, and more especially the obstinate pulmonary complaints of this country.

Mr. Boyd is sent here to perform duties which, compared with the duties of the officers of this post, are *nothing at all*, with a salary of 14 or 1500 dollars a year, besides the perquisites of 5 or 6000 dollars appropriation for the use of the Indian Dept., for the express purpose of furnishing the requisite means for accomplishing the object of his agency. There is abundance of other public ground, less improved, but equally convenient for all his purposes, without any discomfort of the Military, yet he seems inexorably determined to wrest from us our Hospt. and private gardens, regardless of the principles of justice and humanity.

Perhaps you will think me too circumstantial in my communication, but, sensibly feeling the responsibility of preserving the health and restoring the sick of this post, the importance of maintaining the rights and privileges of the Military, and knowing the detriment and injustice it will be to the soldiery, and especially the sick and invalids, to be deprived of the present and long enjoyed scanty privileges of this garden, I am compelled by an imperious sense of duty thus to make the representation. Government must either supply the means of purchasing the vegetable comforts heretofore furnished from this garden, prevent our being dispossessed, or the sick must suffer the deprivation.

I presume, Sir, you will readily form an idea of our wants and privations in this isolated, barren Isle, even under the most favorable enjoyments of all the privileges we can avail ourselves of, and will duly appreciate our condition, and redress our aggrievances, as far as in your power, by the timely application of your influence. *Humanity* requires it from the Medical Dept., and *justice* demands it from the Nation.

I was unable to find in the files of the War Department the final decision on this question, but further developments at Mackinac show that Beaumont won his case. The Indian agency was built about three hundred feet east of the garden and was destroyed by fire in 1873. Up to that time it remained as one of the old landmarks, to which the natives pointed with much pride and interest. It was here that Henry R. Schoolcraft, the versatile linguist, traveler, geologist, and explorer, lived for eight years while serving his government in the capacity of Indian agent. Constance Fenimore Woolson has immortalized "the old agency" in the story of "Anne," so that now the old structure is always referred to by the islanders as "the home of Anne." The building served as both residence and office of the Indian agent, to which the Indians came in great numbers to receive their annuity. It was surrounded by palisades, and on pay days the gates were guarded by soldiers from the fort.¹²

¹² "Early Mackinac," by Meade C. Williams.

The village of Mackinac, which lay just at the foot of the hill, crowned by the old fort, consisted of a row of one-story log structures, with a magnificent beach stretching along the bay in front of them. Many of these houses were also inclosed within picket walls or fences to protect the residents from the marauding and drunken Indians. The settlement could boast at this time of about 500 inhabitants, chiefly French Canadians and half-breed Indians, whose sole occupation was hunting, fishing, and trading in furs. It had also been for several years the headquarters of the American Fur Company and the rendezvous of Indian traders. The officers of the fur company and the officers at the barracks and their families, among whom were but 12 white women, formed the social set of the island. During the summer months, when the clerks, traders, and voyageurs employed by the fur company assembled here with the result of their winter's work, and the process of counting, assorting, appraising, and packing pelts was conducted, the little frontier village suddenly assumed the busy air of a seaport town, and for at least a short period the variegated population was swelled to 4,000 or 5,000.

In order to introduce several characters who play an important role in later chapters of this work, a few words may be said at this point concerning the American Fur Company and some of its most prominent officers.

In 1809 John Jacob Astor conceived the gigantic scheme of establishing in the extreme northwest, at the mouth of the Columbia river, a large fur trading emporium, with a line of smaller posts along the Missouri and Columbia rivers, by means of which he hoped to have absolute control of the fur trade of the entire northwest section. From the chief station, which he proposed to call Astoria, supplies were to be distributed, and furs were to be received from the substations and shipped by water to all parts of the world, especially the Orient.

The story of the two expeditions which he sent out by land and sea is told most interestingly by Washington Irving in "Astoria." We are not especially interested in the remarkable expedition by water, which, after manifold experiences, fights, intrigues, and mutiny, reached the mouth of the Columbia river. The land expedition was assembled at St. Louis in October, 1810, in charge of Wilson Price Hunt, aided by Ramsay Crooks, a young Scotchman, who is one of the chief objects of this portion of our narrative.

Mr. Crooks was a man of excellent education, rare judgment, wonderful enterprise, and unquestionable integrity, a mild man who rarely lost his temper, and "who governed men by quiet reasoning and mild command rather than by dictation." With all this culture and refinement, he became a typical frontiersman—a fearless hunter and adventurer. Mr. Hunt considered himself fortunate to have such a man to lend him support and aid in the conducting of his motley crew of voyageurs, interpreters, trappers, and naturalists through the western wilds. How the party left St. Louis in October and fought its way foot by foot through the wilderness, subjected at different times to Indian warfare and intrigue, to starvation, desert thirst, wintry blasts on the plains, and, Mr. Crooks especially, to serious illness, and how after sixteen months, February 15, 1812, they completed an expedition second only to that of Lewis and Clark from the standpoint of courage, physical endurance, and historical importance, is a matter of common knowledge today.

In June of the same year Mr. Crooks, Robert Stewart, and others of the party started back over the same route to convey the news to Mr. Astor of the planting of the American flag at the mouth of the Columbia, of the establishment of Astoria, and of the status of the fur trade in that section. The return trip was made in ten months, and the party arrived in St. Louis in April, 1813, only to find that war was being waged with Great Britain. Before Mr. Crooks could report the progress at Astoria, Mr. Astor knew only too well the fate that was in store for his pet scheme. In December the *Raccoon*, a British man-of-war, took the American post on the Pacific, and Astoria, established after the expenditure of much money and human endurance, fell into British hands and became Fort George. Undaunted by these enormous losses, Astor now concentrated his efforts on Mackinac, bought out the Southwest Company, obtained favorable legislation through Congress, and rallied those of his men who had proved their loyalty in this expedition around the standard of the rejuvenated American Fur Company, with Mackinac as its headquarters.

Thus, in 1817, we find Ramsay Crooks general director of the affairs of the company, with Robert Stewart in charge of the outside work, both being partners in the concern. The work of reorganizing went on rapidly. W. W. Matthews, who had the general management of the fur company's warehouses, was sent to Montreal to

engage young Canadian clerks and voyageurs, whom he transported in open bateaux through the Great Lakes to Mackinac. Among them was Gurdon S. Hubbard, then a boy of 18 years of age. John H. Kinzie was put in charge of the company's retail store, and William Morrison looked after its affairs in Canada.

Mackinac became the center of a series of trading posts established in a large territory, including the shores of Lake Michigan, Lake Huron, Lake Superior, and the Mississippi country. In the fall, brigades consisting of several bateaux, each manned by a clerk and five to eight voyageurs, started for their distant stations, the clerk usually guiding and the voyageurs propelling. The boats were large, capable of containing not only provisions and clothing, but about three tons of merchandise to be used in bartering with the Indians.

The voyageurs, like the "coureurs des bois," formed a sort of fraternity, gradually developed through the demands of the fur trade. They were French Canadians, sprung from the "habitant class," but differing from the habitant in that they were of a roving disposition, and at home only in and on the water. Once on land, however, he becomes a shiftless fellow, spending his time in revelry and dissipation until the hard-earned money representing the sum total of his winter's earnings is entirely dissipated. About 3,000 of these light-hearted fellows were in the employ of the American Fur Company, and in the months of June and July came in from their several trading posts in the Indian country, bounded by the British dominion on the north, the Missouri river on the west, and the white settlements on the east. The Indians from the upper lakes simultaneously brought in their bark canoes filled with wares which they wished to dispose of, and for a few months at least Mackinac could boast of a variegated transient population of 5,000 men or more.

It was at this season that Beaumont made his appearance in the midst of this motley crowd. He found the beach lined with Indian wigwams and tents of traders and voyageurs, who could not find lodging in the old agency house. Dances and parties, jollifications and fights, and the whoops of drunken Indians greeted him by day and night. The scene was very different from that which he had just left on the placid shores of Lake Champlain. But, soldier-like, he promptly entered on the duties before him, and was soon engaged in his usual painstaking work up at the old fort, which

frowned upon the hilarious scenes in the village. Not only was he looking after the interests of the little garrison, but he had obtained permission to engage in private practice as well, for he was the only physician on the island. At certain seasons of the year, therefore, he had much to do as the result of the dissipation which he found in the garrison, drunken brawls on the beach, and injuries of various sorts. On one occasion we find the hot-headed Scotchman, Mr. Stewart, cudgeling two of his unruly men almost to the point of insensibility. "Dr. Beaumont, the surgeon of the fort, was sent for, who examined the man, and pronounced his skull fractured and the result doubtful. Mr. Stewart was in great distress, and himself cared for the man through the night, being much relieved in his mind when the Doctor told him in the morning that he thought the man would live, though a slight increase in the force of the blow would certainly have killed him."¹³ Many such opportunities must have presented themselves during the assembly of this throng, for fighting was a pastime among them, and each brigade had its stout fellow, characterized by a black feather which he wore in his cap. When there was a fight between the bullies of two brigades, the man winning was given the feather. Such customs and regulations were destined to supply surgical material.

The following record may be presented as a fair example of his work at this period, showing his careful observation and interpretation of symptoms, and the application of rational therapy, medical and surgical.

Shaw, a private soldier in Capt. B. K. Pierce's Compy., U. S. Arty., was struck with a heavy club over the head, which blow depressed a portion of the os frontis on the left side about $\frac{1}{2}$ inch, fracturing (or rather producing a fissure) in the inner table of the skull, running from the frontal sinus obliquely toward the coronal angle of the parietal bone.

The injury was done on the morning of the 7th Decr., 1820. He appeared stupid from that time. Would walk about when compelled, but said nothing, except yes and no occasionally. Looked wild with his eyes, and they frequently seemed obliquely fixed towards the right side. Complained of nothing. Continued in this condition 24 hours, when he was attacked with spasm, commencing in his eyes, mouth, and muscles of the face, drawing to the right side invariably, and extending to the head, neck and breast, and sometimes became universal and violent over the whole system, but mostly so upon the right side, the left appearing rather

¹³ "Incidents in the life of Gurdon Saltonstall Hubbard," by Henry E. Hamilton, 1888.

paralytic than otherwise. This is the appearance exhibited the first time I saw him, which was six days after the injury was recd. He had then been brot 10 or 15 miles through the snow and cold on a train, and was wet and chilled thro. On examination found marks of a heavy blow upon the os frontis, considerable contusion and extravasation of blood about the left eye, but no evident fracture or depression. His extremities cold, and spasms every 10 or 15 minutes, severe and increasing. Comatose, insensible, loss of muscular motion, laborious breathing and small pulse. Eyes half open, rolling and insensible to the Stimulus of light. In this situation I recd. him into the Hospl. 13th Dec. Had him immediately washed all over with warm soap suds, and rubbed with warm campd. spts. Gave him Ether, Laudn, and spts. of Ammonia & warm valerian and castor for two or three hours to restore the action of the extremities and raise the circulation. This done, I opened a vein and took 10 or 12 oz. blood, which gave very slight relief. I then administered 10 grs. Cal. and 5 valerian, twice repeated, followed by a cathc. injection; produced several free stools. Spasms continued to increase in frequency and form for 18 hrs. Finding no probability of radical relief from medical means, I thought it advisable to perforate the cranium under the belief that extravasated fluids were effused upon the brains and required to be discharged. Although there was no fracture or even evident depression to be discovered external of the integuments, yet presuming, from the direction of the blow and the appearance of the contusion, it must be beneath the frontal bone of the side injured, I made a round incision over this, and on dissecting found an evident depression of the skull $\frac{1}{2}$ inch. Applied the trephine about the center of the bone 2 inches above the frontal sinus, and on taking out the circular piece found a fissure extending exactly across its center, in a direction from the sinus towards the coronal angle of the left parietal bone. A quantity of dark, grumous blood oozed from the incision of the saw as it cut through, and much more discharged by depressing the dura mater and elevating the depressed portion.

The spasms continued during the operation with unabated force and frequency, and for 12 hours after; they then became less frequent, but equally hard. The side opposite the injury was most effected by spasm. Operation performed between 3 and 4 O.K. P. M. 12th. Gave him an Infn. of val. and Castor through the night. Spasms continued to diminish in frequency.

13th. Spasms continued thro the night, but less frequent—equally hard. Other variations of symptoms—Sweat profusely, passed his water freely, Tongue typhoid, countenance cadaverous. Removed the superficial dressing and cleansed the wound. Did not look very bad. Fill'd it with Carbon, and applied the carbon poultice over the whole. Rubbed all over warm soap suds and campd. spts. Administered Spts. Mindarari and Soluble Tartar, tablespoonful every two hours alternately. Arrow root and gruel for diet. Spasms much less frequent and diminished in force this evening. Tongue moist, pulse sinking, symptoms less favorable.

7 O.K. P. M. 14th. Continued sinking, spasms less in force and fre-

quency as nature expires. Every remedy ineffectual. Died 14th December, 6 O.K. P. M.

3 hours after demise opened and examined head. Found a fracture about 5 inches long, extending from within about half an inch of the center of the os frontis, running obliquely towards the base of the ear, with two short transverse fractures running in a direction towards the coronal angle of the parietal bone, across which I cut with the circular saw, as mentioned in the operation. The depression was . . . and very slight; the extravasation was extensive, both external and internal of the dura mater. Firm adhesions had taken place between Dura mater and brain above the left hemisphere. Suppuration had formed as abscess in about the center of the left lobe of the cerebrum. A large quantity of grumous and extravasated blood was diffused between the dura and pia mater through the left hemisphere. The right hemisphere was sound and healthy.

While it is very evident that he was deeply interested in the work that he found to do here, it is also very evident from certain references in his diary that his whole heart was not in this work. In March, therefore, he requested a furlough to return to Plattsburgh to be married. This was granted, with the proviso that a surgeon could be obtained to supply his place. So he soon wended his way back to Plattsburgh, his thoughts evidently so completely occupied by the happy prospects of the realization of his dreams of the past year that he found but little time for recording the occurrences of this trip. He made, however, a few notes, and kept an expense account, which ran as follows:

JOURNAL FROM MACKINAC TO PLATTSBURGH, AUGT., 1821.

Augt. 9th, 4 P. M. Left Mackinac, \$2.25. Fair wind, fine weather, pleasant passage. Some agreeable passengers, 1 buffoon, 1 quack. 1 eccentricity.

10th. Strong head wind, progress slowly. Several sea-sick—so myself; 2 P. M., wind so strong that S. B. had to put back 15 miles. Wind subsiding; she came about again at 4 P. M., and made good headway all night.

11th. Pleasant weather; wind in favor, progress 6 miles an hour. Entered the mouth R. St. Clair about 5 P. M., passed Ft. Gratiot, ran down about a mile. Boat stopped to take in more passengers; \$.50; some of them landed. Got under way at sunset, and ran down the river nearly 40 miles in 4 hours to the flats and lay by till daylight. Passed the British vessel Wellington in the flats aground. Entered Lake St. Clair about 6 A. M.; \$.30. Had a very pleasant passage thro that beautiful small Lake, most delightfully bordered on either side by fine, cultivated farms, neat and commodious houses. Arrived at the city of Detroit at 10 A. M. of the 12th. Dined at Col. Mac's. Rode 20 miles into

the country with Capt. Pierce to view his land in Oakland county, \$.50, 13th. Returned next morning; dined at Col. Mac's at 2 P. M.; came on board S. B. at 4; ran down the river to Malden in 2 hours, 18 miles.

14th, 6 A. M. At Sandusky bay; at 2 P. M. at Cleveland; at 6 P. M. at Grand river; 15th, at 7 A. M. at Erie. Weather delightfully pleasant and wind fair. Arrived at Bk. Rk. at 7 P. M., 51 hours only from Detroit.

THE KNOT.

MARRIED in this town on Saturday last, by the Rev. Frederick Halsey, F. W. R. Satterlee, Cashier of the bank of Plattsburgh, to Miss *Cornelia Green*, daughter of Joseph I. Green, both of this place.

On Sunday the 20th inst. by the Rev. Mr. Halsey, Doct. Lyman Foot, of the U. S. army, to Miss *Ann T. Platt*, daughter of Isaac C. Platt, of this town.

On Tuesday of this week, by the Rev. Mr. Halsey, Doct. *William Beaumont*, of the U. S. army, to Mrs. *Deborah Platt*, of this town.

On the 16th ultimo, by the Rev. Mr. Halsey, *Jeremiah B. Banker*, of this place, to Miss *Elizabeth Stribner*, Beekmantown.

In this town on Wednesday last, by St. J. B. L. Skinner, Esquire, Mr. *Elias Doty*, to Mrs. *Mercy George*, both of this town.

THE KNELL.

DIED—In this town on Monday the 20th ult. an infant child of

A clipping from the *Plattsburgh Republican*, September 1, 1821, announcing the marriage of Dr. Beaumont to Mrs. Deborah Platt.

Came to Buffalo, entered on stage boat for Albany, \$3.00; paid to Cdgn. \$4.50.

16th. Arrived at Canandaigua 9 ok. P. M.; entered for Utica 4 ok. morn'g. Stage fare, \$5.50.

Soon after his arrival at Plattsburgh he was married by the Rev. Mr. Halsey, and returned forthwith to Mackinac with his bride.

One who knew Mrs. Beaumont well at this period of her life¹⁴ states that she was noted for her rare personal beauty and irresistible charm of manner, which were only enhanced by her gentle "thee and thou" of speech. The events of her younger years had developed in her courage and strength of endurance almost masculine, and yet withal she was by nature a delicate, sensitive feminine character. She was peculiarly prepared for the adversities and privations of this new life in the wild country. The proverbial Quaker hospitality and her splendid ability to entertain introduced a new and much needed feature into the garrison life of this uncivilized domain. She kept open house for her husband's fellow-officers, who, far from home, were much in need of the leavening influence of gentle, refined women in their midst, for, as we have mentioned before, there were at this time not more than a dozen white women on the entire island. They established their little home within the walls of the old fort, and in due time a child came to break the monotony of her humdrum existence and relieve the feeling of homesickness that she naturally experienced so far from her family ties and the fertile fields and placid waters of the Champlain home that she loved so dearly. A few months after the birth of their little daughter, Sarah, the proud father wrote the following letter to "Grandparents Green:"

I write, my dear Parents, in filial obedience to the kind dictates of connubial affection, and am happy in doing so, because I think I am adding a mite to the quantum of your declining enjoyments and earthly felicities by announcing to you the good health, happiness and contentment of your fond and favorite Debh., your little grand-son Melanchton,¹⁵ and grand-daughter Sarah, who are all in the full enjoyment of every necessary blessing of human life. Debh. has occasional periods of tender musings upon the circumstance of being so far and so long separated from her aged parents and affectionate relatives and friends, and feels sad and sorrowful at the time, shedding tears of gratitude and affection most copiously; but it is only the impulse of a moment, and she is always relieved by the indulgence, and immediately resumes her usual cheerfulness and vivacity, and returns again to her wonted paths of domestic duties and maternal cares, superintending her household and nurturing and caressing the children, with that placid benignity of countenance so natural to her temper and disposition when troubles and

¹⁴ Mrs. Elizabeth Smith Martin, niece of Mrs. Beaumont, daughter of Colonel Melanchton Smith and Anna Greene Smith.

¹⁵ Colonel Melanchton Smith, whose second wife was Anna Green, the sister of Mrs. Beaumont, had a son Melanchton, born in 1810, by his first marriage. At this time he was 13 years of age. It is probable that he came to live with the Beaumonts at Mackinac, having lost his parents.

vexations are far away, as we verily hope they are, and with them a long and distant flight. She is troubled occasionally by visits from her old acquaintances, pain-in-the-side, and experiences some slight indisposition, and lately has some qualms—not of conscience, but of the Stomach.

Our little daughter has the cheerfulness and vivacity of her mother's



Dr. Beaumont at about the time of his marriage. (From a small painting on porcelain in possession of Mrs. Sarah Beaumont Keim.)

disposition fully stamped upon her by nature, and is continually displaying them to the delights and admiration of all that know her. "She's blithe and she's bonny, and she's dear to her mamma," and to her papa, and would be to her Grand-parents if they could see her, no doubt. Little Melanchton is also an unusually fine and interesting boy. He is the favorite of everybody, and is almost considered as a prodigy of intelli-

gence and sprightliness for one of his age. They are little boon playmates, constantly amusing our ears through the day with their cheerful little prattle and infantile gambols about the house, and through the night lie quietly embraced in the arms of "Nature's Sweet restorer," always waking in the morning smiling and pleasant.



Mrs. Beaumont at about the time of her marriage. (From a small painting on porcelain in possession of Mrs. Sarah Beaumont Kelm.)

We verily hope, and partially believe, that it will be our happy fortune to visit you with our little family in the course of a year or two. Your declining years and our anxiety require that we should so soon as is possibly consistent with my official situation.

Our best love to all the family, and believe me your affectionate Son-in-law,

WILLIAM BEAUMONT.

CHAPTER VI.

1822-1828.

Early in the month of June, 1822, Indians and voyageurs were returning to Mackinac with the results of their winter's catch. The little village had awakened from its long sleep, and the beach was again crowded with tents and wigwams and a seething mass of strange humanity. New arrivals of canoes and bateaux were being heralded, and friends who had been stationed far apart in the wilds of the North were familiarly greeting one another. Some were pitching tents in which to sleep when not otherwise engaged in carousing; newer arrivals were unpacking pelts, watching their appraisal by the officers of the fur company, and eagerly awaiting the figures that were to indicate the results of their winter's work; others, whose fate had already been decided, were engaged in games or watching the fight of two of the brigade bullies for the proverbial "black feather;" others still were crowding into the retail store of the American Fur Company in an effort to buy buckskin coats, moccasins, flannel shirts, and gaudy neck bands. It was in this little throng that a tragedy occurred on June 6th which was to leave its imprint on the pages of medical history for all time to come. A gun was accidentally discharged, and a young voyageur dropped to the floor, with a cavity in the left upper abdomen that would have admitted a man's fist. He proved to be a young French Canadian about 19 years of age, who had recently come down from Montreal, doubtless with one of the expeditions of Mr. Matthews.

Gurdon S. Hubbard¹ was an eye witness of this accident, and the only one who has left any statement concerning the affair. He says:

The late Major John H. Kinzie² had charge of the American Fur Com-

¹ "Incidents and Events in the Life of Gurdon Saltonstall Hubbard," collected from personal narrations and other sources, and arranged by his nephew, Henry E. Hamilton, 1888.

² Gurdon S. Hubbard and John Kinzie remained lifelong friends, and at the time of their death were among the most prominent citizens in the city of Chicago. Chicago was incorporated in 1835, with Mr. Hubbard and Mr. Kinzie as two of the five trustees. Mr. Hubbard was for many years the largest pork packer in the West, director of the Chicago branch of the State Bank of Illinois, and one of the organizers of the Chicago Board of Trade. The firm of Hubbard & Co., commission merchants, was for many years one of the largest in the country, and established the Eagle line of steamers between Buffalo and the Upper Lakes. After the formation of the Republican party he became one of Mr. Lincoln's warmest supporters for the presidency. (Biographical Sketch, Chicago Historical Society, 1907.)

pany's retail store at Michilimackinac. I was in the habit of assisting him occasionally when a press of customers needed extra clerks. The store comprised the ground floor near the foot of Fort Hill, on the corner of the street and the road leading up to the fort. The rear part of the store was underground, built of stone, which is still standing.

This St. Martin was at the time one of the American Fur Company's engagees, who, with quite a number of others, was in the store. One of the party was holding a shotgun (not a musket), which was accidentally discharged, the whole charge entering St. Martin's body. The muzzle was not over three feet from him—I think not over two. The wadding entered, as well as pieces of his clothing; his shirt took fire; he fell, as we supposed, dead.

Dr. Beaumont, the surgeon of the fort, was immediately sent for, and reached the wounded man within a very short time—probably three minutes. We had just got him on a cot and were taking off some of his clothing.

After Dr. Beaumont had extracted part of the shot, pieces of clothing, and dressed his wound carefully, Robert Stewart and others assisting, he left him, remarking, "The man can't live thirty-six hours; I will come to see him by and by." In two or three hours he visited him again, expressing surprise at finding him doing better than he anticipated. The next day, I think, he resolved on a course of treatment, and brought down his instruments, getting out more shot and clothing, cutting off ragged ends of the wound, and made frequent visits, seeming very much interested, informing Mr. Stewart in my presence that he thought he could save him.

As soon as the man could be moved he was taken to the fort hospital, where Dr. Beaumont could give him better attention. About this time, if I am not greatly mistaken, the doctor announced that he was treating his patient with a view to experimenting on his stomach, being satisfied of his recovery. You know the result.

I knew Dr. Beaumont very well. The experiment of introducing food into the stomach through the orifice, purposely kept open and healed with that object, was conceived by the doctor very soon after the first examination.

Beaumont's own version of the accident was summed up in the following statement:

Being then stationed at the garrison on that island, and no citizen within 300 miles, I was immediately called to his relief, and when I arrived at this place 15 or 20 minutes after the accident found him senseless and apparently in a moribund state. To endeavor to resuscitate and relieve his sufferings being the first impulse, I applied the best means in my power and took the responsibility of his surgical treatment and medical attendance. . . .

The most complete description of the wound received by St.

Dr. William Beaumont, 10
 19 Years old, fairly robust & healthy, was
 accidentally shot by the ventricle discharge
 of a gun, on the 6th of June 1822.
 The whole charge, consisting
 of powder & duck shot, was received in the
 left side about seven inches 2 or 3 feet
 distance from the middle of the back, in a
 posterior direction, obliquely forward & into
 the body - carrying away by its force, the integu-
 ment more than the size of the palm of
 a man's hand, - blowing off & fracturing the
 6th rib, from about the middle and driving
 fracturing the 3rd - fracturing the lower portion
 of the left lobe of the lungs - & fracturing the
 sternum, by a splinter of the rib that
 was blown through it - Fracturing the upper
 & lower portions of the fracture. The chest
 was filled with fragments, & burning the clothing
 I fled to a camp - I was called to help
 immediately after the accident - found the
 a portion of the lungs as large as a turkey

I thought; I believe the stomach's resis-
 tance a portion of the stomach; what is the
 result, I cannot believe it is the
 stomach's resistance with the
 subject surviving - but on clear ex-
 amination I found it to be actually the
 stomach with a perforation in the portion
 portion. Large enough to receive my fore-
 finger, I thought which a portion of his
 food. That he has taken for breakfast.
 had come out, I judged among their
 affairs. In this dilemma, I considered
 any attempt to save life was useless for that as I had
 taken care to see it a duty, to see every man
 in my power to save life when called to
 administer relief. I proceeded to clean
 the wound, & give it a temporary dressing
 not believing it would be for him to survive
 twenty minutes. On attempting to sew
 the protruding portion, I found the lung was

The first of seventeen pages of the elaborate hospital record of Alexis St. Martin's case kept by Dr. Beaumont. (Size of original, 7½ by 12 inches.)

(Size of



In the basement of this house Alexis St. Martin was wounded. It was then the retail store of the American Fur Company. This picture shows its present appearance, the upper part of the old structure having been replaced by a new one. It stands at the foot of the hill on which is the fort, measures 20 by 40 feet, and was entered by a door behind the lattice work. (From a photograph in the laboratory of comparative physiology of the Harvard Medical School.)

Martin, the treatment and progress of his case, is exhibited in Beaumont's hospital records and bedside notes, extending over a period of two years. This record was found in a journal of various cases under his observation from 1822 to 1824 (see page 104), and bears the title, "Sundry Cases of Practice—San Martin, St. Andre, Sheridan, etc., etc." All of the patients received the same careful consideration as did St. Martin. St. Andre's case was one of "great swelling of his belly," found to be a "confirmed case of ascites." The case of Sheridan was that of a deserter from the post of Mackinac, who "got lost and wandered about for seven days without either food, drink, fire, or bed clothes, the thermometer ranging between 20 degrees above and 14 degrees below zero," while the case of St. Martin was to him at this time simply one of "wounded stomach," calling for his best efforts to bring about a complete cure.

It is interesting to note that he had considerable difficulty in understanding the lad's patois, as is evidenced by various attempts to get his name correctly. The record, kept over a period of two years, is a model of thoroughness and completeness that would be a credit to our modern-day hospitals, and is worthy of being reproduced here in full:

Alex Samata, St. Martin, San Maten, a Canadian lad about 19 years old,³ hardy, robust and healthy, was accidentally shot by the unlucky discharge of a gun on the 6th of June, 1822. The whole charge, consisting of powder and duck shot, was received in the left side at not more than 2 or 3 feet distance from the muzzle of the piece, in a posterior direction, obliquely forward and outwards, carrying away by its force the integuments more than the size of the palm of a man's hand; blowing off and fracturing the 6th rib from about the middle anteriorly, fracturing the 5th, rupturing the lower portion of the left lobe of the Lungs, and lacerating the Stomach by a spicula of the rib that was blown through it[s] coat, Lodging the charge, wadding, fire in among the fractured ribs and lacerated muscles and integuments, and burning the clothing and flesh to a crisp. I was called to him immediately after the accident. Found a portion of the Lungs as large as a turkey's egg protruding through the external wound, lacerated and burnt, and below this another protrusion resembling a portion of the Stomach, what at first view I could not believe possible to be that organ in that situation with the subject surviving, but on closer examination I found it to be actually the Stomach,

³According to the statement of Rev. Mr. Chicolne, curé of St. Thomas ("William Beaumont, a Pioneer American Physiologist," *Journal American Medical Association*, November 15, 1902, Osler), St. Martin died in 1880 at 83 years of age. If this be true, he was born in 1797, and must have been 25 years old when the accident occurred.

with a puncture in the protruding portion large enough to receive my forefinger, and through which a portion of his food that he had taken for breakfast had come out and lodged among his apparel. In this dilemma I considered any attempt to save his life entirely useless. But as I had ever considered it a duty to use every means in my power to preserve life when called to administer relief, I proceeded to cleanse the wound and give it a superficial dressing, not believing it possible for him to survive twenty minutes. On attempting to reduce the protruding portions, I found the Lung was prevented from returning by the sharp point of the fractured rib, over which its membrane had caught fast, but by raising up the Lung with the front of the forefinger of my left hand I clipped off with my penknife, in my right hand, the sharp point of the rib, which enabled me to return the Lung into the cavity of the Thorax, but could not retain it there on the least efforts of the patient to cough, which were frequent.

After giving the wound a superficial dressing, the patient was moved to a more convenient place, and in about an hour I attended to dressing the wound more thoroughly, not supposing it probable for him to survive the operation of extracting the fractured spicula of bones and other extraneous substances, but to the utter astonishment of every one he bore it without a struggle or without sinking.

After taking away the fragments of the ribs, old flannel, wad and the principal charge of shot, all driven together under the skin and into the muscles, and replacing the lungs and stomach as much as practicable, I applied to the wound the carbonated fermenting poultice, composed of flour, hot water, charcoal, and yeast, changing once every 8, 10, or 12 hours, according to the quicker or slower process of fermentation, keeping the parts around constantly bathed with a solution of muriate of ammonia in Spirits and vinegar. This was done with an intention to excite local reaction as soon as possible upon the surface and occasional sloughing of contused, lacerated and burnt muscles and integuments, which had the desired effect in less than 84 hours, with assistance of the Camphorated Aq. Amon. Acet. given internally in liberal quantities. Under the above treatment a lively reaction commenced in about 24 hours, accompanied with strong arterial action and high inflammatory symptoms of the system generally, more specially of violent pneumonia and inflammation of the Lungs, with great dyspnoea and distressing cough. At the commencement of those symptoms I opened a vein and took 12 or 14 oz. of blood from the arm. Gave a mild cathartic. The bleeding abated the action and gave relief. The cathc. had no effect, having escaped from the stomach through the wound. I continued the Caphd. Aq. Acetat. every hour for the first 72 internally and the carbonated poultice and wash externally, omitting the muriate. The fever continued for 8 or ten days, running into the Typhoid type and the wound becoming very fetid. Nothing passed his bowels after the 2d day, and they became impervious and inactive, scarcely to be excited by stimulating injections. From the 2d day till the 10th nothing passed, no reaction from his bowels

at all, everything he took into his stomach was either absorbed or made its exit at the wound externally.

About the 5th day a partial sloughing took place in the wound and the febrile symptoms abated. The protruded portion of the lungs and the small lacerated piece of the stomach also sloughed off, and left the puncture of the Stomach plain to be seen, and large enough to admit my forefinger its whole length directly into the cavity of the stomach, and a passage into the cavity of the Thorax half as large as my fist, exposing to plain view the action of the left lobe of the Lungs, and admitting at every respiration full escape of air, bloody mucus, froth, etc.

About the 10th day a more extensive sloughing took place. The febrile symptoms all subsided, and the whole surface of the wound put on a healthy, granulating appearance. The fractures of the ribs commenced exfoliating, and nature kindly performing what human foresight viewed as hopeless and professional skill might calculate upon with dubious odds. All that entered his stomach came out again at the wound for 12 or 15 days, and the only means of sustaining him was by nutritious injection given per anus until all was sloughed, and compresses and adhesive strap could be applied to stop the orifice in the stomach and retain the food and drinks.

A lucky and perhaps the only circumstance to which his miraculous survival can be attributed was the protruded portion of the Stomach, instead of falling back into the cavity of the abdomen to its natural position, adhered by the first intention to the intercostal muscles, and by that means retained the orifice in the wounded stomach in contact with the external wound, and afforded a free passage out and a fair opportunity to apply the dressings. The carbon poultice was continued constantly until the sloughing was complete and the granulating process established. They were afterwards occasionally applied as a corrective when the wound was becoming ill conditioned or languid. The Aq. Am. Acetat. was continued for several weeks, in proportion to the febrile symptoms or fetid condition of the wound.

No sickness or peculiar irritability of the Stomach was ever experienced, not even nausea, during the whole time; and after 3 weeks the appetite regular and healthy, alvine evacuation became regular, and all the functions of the system seemed as regular and healthy as in perfect health, excepting the wounded parts.

Cicatrization and contraction of the external wound commenced about the 5th week, and continued gradually and almost uninterruptedly. The Stomach at the wounded part became more and more firmly attached to the intercostals by its external coats, but showed not the least disposition to close its puncture by granulations forming from its own lacerated coats any more than is in the anus or mouth. By applying the nitrate of silver to the edges of the wounded muscles of the stomach, I could extend the attachments by its external and cellular coats more firmly to the intercostals or external integuments, which seemed rather to enlarge than contract the orifice in the Stomach, bringing it more and more ex-

ternal as its adhesions to the external wound increased, resembling in its appearance (all but the Sphincter) a natural anus, with a slight prolapse every time I removed the dressings, and the contents of the Stomach would run out fairly in proportion to the quantity received. If the Stomach happened to be empty when I dressed it, a prolapse and partial inversion of the Stomach would follow the removal of the compresses of lint from the wound, unless prevented by the application of my thumb, finger, or something else to its orifice while the dressing was reapplying. Frequently upon removing the dressings, when they had become looser than usual by some derangement of the bandages, the stomach would be inverted and the inner coats protruded through the orifice large as a hen's egg. No difficulty occurred in reducing it; a gentle pressure with the thumb or finger upon the protruded portion would quickly return it to its place without giving the least pain and almost without sensation. Nitrate of silver, applied to the lips of the wound and upon the inner coats of the Stomach so as to produce sloughing, occasioned less sensation than when applied to the most common fungus or ulcer upon the surface of the body or limbs, a conclusive evidence in my opinion that the Stomach is not so exquisitely sensible an organ as is represented by anatomists and Physiologists in general.

About the 6th or 7th week exfoliation from the fractured ribs and the separation of the ribs from the cartilagenous ends began to take place; spiculae of bones and fragments of old cloth and shot also were working out from among the muscles and integuments. The 6th rib, that was worst injured and blown off entirely in the first place, was also abraded of its periostium for about three inches back of the fracture towards the Spine and became carious at its fractured extremity. So that I was obliged to amputate it about midway between sternum and spine, which I did by dissecting around, separating and retracting the intercostals to the sound portion of the rib, and then sawing it off by introducing between the ribs a very narrow, short saw, which I had made for the occasion. In this operation I succeeded admirably, beyond my most sanguine expectations, taking the rib off smoothly without injuring any parts whatever. The granulations shot immediately out and formed soundly over the amputated end. About half of the interior edge of the other rib exfoliated longitudinally from about the center to the Sternum, and then the healthy granulation formed soundly over the other part and continued so.

After removing all the exfoliations and extraneous substances that were to be found about the wound, my next object was to contract the external wound and close up the puncture in the stomach if practicable, which I attempted by drawing the edges of the wound as near together as I could by adhesive straps laid on in radiative form, the circumference of the external wound being at least 12 or 14 inches, the orifice in the Stomach about in the center. To retain the food and drink as much as possible, I kept to the orifice a firm compress of lint, fitted to the shape and size of the puncture, and confined by the straps. Under these dress-

ings and management cicatrization went on rapidly, his health improving, and all functions of the system regular. Digestion was as completely performed as in the most healthy person in the vicinity (and I could even see it go on every time I dressed the wound). I kept the granulating surface duly stimulated by applying sometimes Cincona pulv., sometimes Mirc. precip. Rub., and sometimes Nit. Silver, as the state of the granulation indicated.

After trying every means within my power to close the puncture of the Stomach by exciting adhesions between the lips of the wound of its own proper coats, without the least appearance of success, I gave over trying, convinced that the Stomach of itself will not close a puncture in its coats by granulations, and the only alternative left seemed to be to draw the external wound together as fast as cicatrization would form and contracting as much as possible the orifice in the Stomach, and make the granulations from the intercostal muscles and integuments shoot across and form over and close it that way. But to this method there seemed an insuperable difficulty, for, unless there be kept constantly upon the orifice a firm plug of lint compound, all the contents of the Stomach flow out and the patient must die for want of aliment, and this lint, intersecting, prevents the granulation from forming across.

The lacerated portion of the lungs sloughed off and digested away, leaving a surface suppurating in the lobe of the lungs large as the concave surface of a teacup, from which continued to issue much purulent matter for two or three months until it became completely filled up with healthy granulations and cicatrized over externally, with the lower portion of the left lobe firmly adhering to the Pleura costalis. Four months after the injury an abscess formed about two inches below the wound, anteriorly, over the cartilaginous ends of the 1st and 2d false ribs, very painful and extremely sore, producing a violent symptomatic fever, checking the process of cicatrization, rendering the granulation languid and pale, and the wound ill-conditioned and unfavorable to the prospects of recovery. After applying emollient poultices for several days, the swelling pointed externally, and I punctured and laid it open with the bistoury and director for about 2 or 3 inches. It discharged copiously very fetid, purulent matter for the first 2 days. On the 3d I could feel with the probe a small extraneous substance, which in the course of 3 or 4 days, by the use of the soap plaster and compresses, proved to be a shot and a small portion of the wad. After the exit of these I could introduce a common pocket-case silver probe nearly its whole length in the longitudinal direction of the ribs, and a great soreness and pain extended from the opening in the abscess upon the track of the cartilaginous ends of the false ribs to the spine, with a copious discharge from a long fistulous sinus. In the course of about 5 or 6 days [appeared] the cartilaginous end of a rib about an inch long; soon after this followed some small spicula of bone. The discharge, soreness and inflammation continued in the same direction. In about 6 or 7 days longer came away another similar cartilage about an inch and a half long, and in about the

same length of time another 2 inches, and so continued to come away every 5 or 6 days, increasing in length in about the same proportion until five had made their exit through the same passage. The last was about three inches long, and seemed to be separated from the last false rib, as the soreness terminated at that point, and after which the sinus commenced closing, the discharge diminished, and the soreness subsided from that point forward with regular progression. The discharge, pain and irritation during the 4 or 5 weeks all those cartilages were working out reduced the strength of the patient very much, induced a general febrile habit, and stopped the healthy healing process of the original wound. Directly after exit of the last mentioned cartilage an inflammation appeared at the lower end of the sternum, about over the ensiform cartilage, from the anterior end of the original wound, extremely irritable and very painful. By the use of emollient poultice a few days it terminated in a large abscess, which I punctured and laid open an inch or two with the bistoury. About half a pint of very offensive matter discharged from this, and in a few days followed a cartilaginous substance about 3 inches long, after which the inflammation subsided. In a day or two after this came away another small cartilage and the discharge abated. To support the patient's strength under all these debilitating incidents, I gave him the diluted muriatic acid and wine, which very much improved his health and increased his strength.

It is now going on the 7th month since the injury was received, and the orifice in the stomach is still visible and but little contracted. The integuments are all cicatrized, smooth to within the circumference of a half eagle, immediately around the wound in the Stomach. His health daily improving, his spirits good, his appetite regular, his sleep refreshing, and all the functions of the system natural and healthy.

Dec. 2, 1822. Can the puncture of the Stomach be successfully closed by mechanical means until the granulations have time to form over and across it?

Dec. 3d. Omitted dressing wound myself, though dressed by the nurse.

Dec. 4th. On dressing today found a portion of the new cutis vera at the anterior extremity of the cicatrix raised up and separated from the pectoral muscle by the matter forced back from the sinus above in consequence of an obstruction in its usual outlet. On puncturing and laying it open about an inch and a half, found a small piece of cartilage loose and took it away and a large piece which seemed to be separating from the Sternum.

Dec. 5th. Dressed it today. Found it in better condition than yesterday. Inflammation and soreness subsiding, discharge less.

Dec. 6th. Dressed today. Still doing well.

Dec. 7th. Dressed. Still improving.

Dec. 8th. Dressed. Still improving.

Dec. 9th. Dressed. Original wound diminishing. sinuses discharge less, condition better.

Dec. 10th. Dressed. Condition of the wound, sinuses, etc., improving.

Keep them dressed with cincona pulv., dry lint and adhesive straps, bathing the parts around with camphorated Spts. and water, and continue the muriatic acid.

Dec. 11th. Dressed. Improving, in healthy condition.

Dec. 12th. Dressed. Sores lessening in circumference and filling up with granulations. All healthy, except the one in front of the Sternum, which seems to have something extraneous behind yet—a piece of cartilage no doubt.

Dec. 13th. Dressed. To facilitate the closing of the puncture of the stomach, and remove the impediments to the granulations, which the constant pressure of compresses necessary to retain the food in the Stomach from day to day cause, I made fast a piece of lint to a ligature, just large enough to pass through the orifice into the Stomach, and then with the end of the probe pushed it on the inside, and, suspended by the ligature, drew it up against the inside of orifice, so as to stop the food, etc., from flowing out upon the inner side, and by this means suffering the granulations from the edges of the wound to contract nearer each other around the small ligature.

Dec. 14th. Dressed in the same manner as yesterday.

Dec. 15th. Dressed as yesterday, excepting the introduction of a small silver canula introduced instead of the ligature and lint.

Dec. 16th. Dressed as yesterday. Find the canula will not answer the purpose so well as the plug of lint suspended by the string.

Dec. 17th. Removed the canula and dressed as usual.

Dec. 22d. The above manner of dressing continued without any variation since the 17th. Continued the wash around the wound of Camphorated Spirits, water and vinegar, injecting frequently into the sinuses the same wash more diluted.

Dec. 23d. Added to the Muriatic acid, diluted, about one-third of the tincture of —, to be taken three times a day in doses of a half teaspoonful. The discharge still purulent and healthy, and diminishing in quantity. The orifice in the Stomach remaining about the same as it has been for 3 months, tho the wounds of the muscles continue to contract and are fast cicatrizing upon the Stomach. The food still makes its exit whenever the dressings are removed.

Jany. 3d. 1823. Dressed every day since the 23d last mo., condition continuing nearly the same until, 3 or 4 days, an inflammatory redness appeared around the lower part of the Sternum, with considerable heat and some swelling, and today appeared another cartilage, which I took out—about one inch and a half long.

Jan. 6th. Swelling and inflammation subsiding. Took away at the opening of the sinus another cartilage 2 and half inch in length.

Jan. 10th. Since extracting the last cartilage the sinus has closed and the discharge ceased, excepting a very little from the sternal end, where some small pieces of diseased cartilage still remain undetached and keep up a small discharge.

Jan. 19th. Small piece of cartilage came from the ulcer on the ster-

num; other sinuses all closed; orifice in the Stomach about the same as ever.

Feb. 1st. Dressed every day since last date; all the ulcers and sinuses closed sound; the patient in perfect health; the orifice in the stomach in *Statu quo*.

March 10th. Dressed daily since last date; much in same condition; orifice in the stomach a little diminished.

March 25th. Dressed daily since last date; no alterative in condition; orifice in the stomach the same.



The one-story frame hospital at the old fort, to which Alexis was removed, and where he lay during his long convalescence.

Apl. 1st. Dressed daily; continues in same condition; general health good.

May 30th. Continued daily dressing as usual since last date; no essential variation in the wound; health good until within a few days past. Having complained of pain in the head, nausea, a cathartic of Rhei and sulphur administered, it is presumed, as never medicine was before administered to man since the creation of the world—to wit, by pouring it in through the ribs at the puncture into the stomach. I administered it in the form of dry powder. It occasioned a slight nausea in less than 10 minutes and operated briskly as a cathc. in less than two hours.

May 31st. Feels relieved by the operation of the medicine given yesterday. Administered in the same manner today 11 oz. manna, 1 oz. magnesia.

The County refusing any further assistance to the patient (who has become a pauper from his misfortune), I took him into my own family from mere motives of charity and a disposition to save his life, or at least to make him comfortable, where he has continued improving in health and condition, and is now able to perform any kind of labour from the whittling of a stick to the chopping of Logs, and is as healthy, active and strong as he ever was in his life, or any man in Mackinac, with the apperture of the Stomach in much the same condition as it was at the last mentioned date. June 1, 1824.

In a memorandum made in the preparation of a memorial to Congress, I find a more exhaustive statement concerning the attitude of the community toward poor Alexis:

Being a poor boy, without relation or friends at the time of the accident, he became a pauper upon the Town and County of Mackinac. But their charity fund being small, soon became exhausted, and, the people not being able to raise any more, he was left entirely destitute of every means of comfort, and even of a place to rest his wounded body or sustain his suffering, debilitated nature, and in this helpless condition the *Benevolent* authorities of the Town were about to pack him off in an open batteau to his native place, Montreal, L. C., a distance of nearly 2,000 miles. Repeated remonstrances against such an inhuman disposal of a person in his condition being of no avail in arresting the execution of the design, and knowing that his life must inevitably be sacrificed in such an attempt, I resolved to rescue him from the pending misery and death. I took him into my own family in April, 1823, at a time when he was helpless, sick and suffering under the debilitating effects of his wounds, naked and destitute of everything, but pain, a little "breath of life," and a wounded body. In this condition he remained with me, gradually improving, for a year or two, when he became able to walk about and help himself a little, but unable to provide for his own necessities. During this time I nursed him, fed him, clothed him, lodged him and furnished him with every comfort, and dressed his wounds daily and for the most part twice a day.

Let us not forget, in this connection, that the salary of an assistant surgeon at this period was the munificent sum of \$40 a month and two to four rations daily, and that Beaumont, in addition to supplying out of this sum his own needs and those of Alexis, had a family to support.

The inhuman attitude of the citizens of Mackinac on this occasion was doubtless responsible for the sarcastic soliloquy on Charity, which appears in his journal, though not immediately following the case of St. Martin. It was his custom, in fact, to jot down his ideas wherever and whenever they occurred to him; not infre-

quently, therefore, we find kindred thoughts widely separated from one another, the relationship remaining none the less certain.

CHARITY.

Happy are they that die in the poor-house of this place, and three times doubly happy are the people of the Borough who reluctantly contribute to their wretched support while living upon the public charity! Were I reduced to the necessity of existing upon the charity of this Borough, I would commit suicide without scruple or hesitation, from principles of justice to poor human nature, from no other motive than to rescue her from the opprobrious ignominy of suffering a fellow being to perish in distress for want of comfortable and timely assistance! It is truth, abhorrent to human nature and too melancholy to be recorded, that, in my opinion, the public officers of the Borough, whose duty it is to provide relief for the distressed, would sooner pay a round sum for the extinction of life of a pauper than to make an exertion or take any trouble to procure the necessary assistance.

"May the Lord deliver us from evil," than which a greater could never befall a human being than to become dependent upon the charity and benevolence of the people for relief in time of distress, for this is the Kingdom of Satan, the power of Tyrants, the Benevolence of Turkey and the Glory of Heathens! Amen! & Amen!

No one can doubt, after a careful perusal of St. Martin's case history, that every possible effort was made to close the wound completely, and that Mr. Hubbard was laboring under a misapprehension when he stated that the tract was purposely kept open with a view to conducting experiments upon the stomach. Beaumont even states that, when all other means failed, he suggested incising the lips of the wound and "bringing them together with sutures, an operation to which the patient would not submit."

The idea of carrying on a series of experiments on the stomach of St. Martin seems not to have occurred to him until early in 1825, just prior to his leaving Mackinac. He now began to realize the great importance of the case that had so strangely fallen into his hands, and to appreciate the duty that he owed to humanity as a result of the incident, for about this time we find in one of the manuscripts devoted to a description of the case the following:

He will drink a quart of water or eat a dish of soup, and then, by removing the dressings and compress, can immediately throw it out through the wound. On removing the dressings I frequently find the stomach inverted to the size and about the shape of a half blown rose, yet he complains of no pain, and it will return itself, or is easily reduced by gentle pressure.

When he lies on the opposite side I can look directly into the cavity of the Stomach, and almost see the process of digestion. I can pour in water with a funnel, or put in food with a spoon, and draw them out again with a syphon. I have frequently suspended flesh, raw and wasted, and other substances into the perforation to ascertain the length of time required to digest each; and at one time used a tent of raw beef, instead of lint, to stop the orifice, and found that in less than five hours it was completely digested off, as smooth and even as if it had been cut with a knife.

It now begins to dawn upon him that an unusual opportunity is offered him, and he comments as follows:

This case affords an excellent opportunity for experimenting upon the gastric fluids and process of digestion. It would give no pain, nor cause the least uneasiness, to extract a gill of fluid every two or three days, for it frequently flows out spontaneously in considerable quantities. Various kinds of digestible substances might be introduced into the stomach, and then easily examined during the whole process of digestion. I may, therefore, be able hereafter to give some interesting experiments on these subjects.

During all this time Alexis' had not been a bed of roses. His two years of convalescence had been anything but uneventful, and now, that he had practically recovered his strength and usefulness, his trials were not at an end. It is true that his misfortune had made him famous for all time to come, that his name was being heralded throughout the medical world, that every "Child's Health Primer," "Essentials of Physiology," and "Elementary History of the United States" were to contain for generations an account of his passive contribution to science, but all this was in no sense adequate compensation for past and future trials. Now he would have to submit to having all manner of digestible and indigestible objects poked into the orifice in the stomach, would have to fast for hours, lie in certain positions for interminable periods, carry small bottles about in his armpits, and all this for the sake of science, in which he had not the slightest interest. Not only this, but the finger of curiosity was being pointed at him from every side as "the man with a lid on his stomach." It is said that he was often provoked to resent the jeers in hot blood, and not infrequently made threats to the Doctor of "giving up his job."⁴

Hon. Chase Osborn⁵ calls attention to an interesting little story

⁴"Early Mackinac," by Meade C. Williams.

⁵Mr. Osborn referred to this story in his address at the dedication of the monument erected to Beaumont at Mackinac. I am indebted to him for courtesies in this connection.

by Mrs. Mary Hartwell Catherwood,⁶ in which she describes a conflict between Etienne St. Martin, a brother of Alexis, also in the employ of the American Fur Company, and Charl   Charette in the court yard of the old warehouse and barracks.⁷ While the fight was primarily due to jealousies aroused by the fickleness of Tite Laboise, the wife of Charl  , and her inclination to dance with Etienne at the Mackinac balls, it was finally precipitated by Charl  's sarcastic reference to "these St. Martins without stomachs" and "the little lard-eater from Canada, brother to a man with a stomach having no lid." Charl   was the wearer of the "black feather" in his brigade of a dozen boats, and had no trouble putting the little voyageur on his back in the presence of a crowd of officers and employees of the American Fur Company that had stopped long enough to watch the sport. Etienne had at least attempted to vindicate his family's name, and arose from his humiliating position with the threat that "if they do not let my brother's stomach alone, I will have to kill the whole brigade."⁸

In the fall of 1824 Beaumont sent a complete report of Alexis' case to Surgeon-General Lovell⁹ for his approval and correction, with the suggestion that it be published in some reputable medical journal, and in response to this communication received the following reply from the surgeon-general on November 9th:

I have received your letter enclosing your valuable communication of the case of wounded stomach. The cure is a full demonstration of the wonderful powers of nature and highly creditable to yourself. Agreeably to your suggestion, I shall send it to the *Medical Recorder* for publication, altering it only so far as may be necessary to introduce a part of your letter relative to the present state of your patient.

⁶ "Mackinac and Lake Stories—The Black Feather." by Mrs. Mary Hartwell Catherwood.

⁷ The John Jacob Astor House is still well preserved and utilized as a summer hotel. It was built for the storing of furs and the housing of men during the summer gatherings.

⁸ I was unable to learn through correspondence with Miss Hazel Catherwood whether the above story was based on fact or fiction.

⁹ Dr. Joseph Lovell was the first incumbent of the high office of "surgeon-general," which was tendered him in 1818 in recognition of his skill as a surgeon and his splendid qualifications as executive and organizer while hospital surgeon. To him belongs much credit for the excellent foundation upon which the present high efficiency of the medical corps of the army has been built. In spite of the efforts of Dr. James Tilton, his predecessor, the medical service was still in a rather chaotic state, and Dr. Lovell at once set to work to reorganize the corps along the lines of its present organization. Among the problems that he had to solve were the system of admission upon examination, the question of private practice on the part of military surgeons, their choice of stations and choice of quarters, the numerical increase of the corps, the abolition of the whisky ration, etc. He died on October 17, 1836, shortly after the death of his wife, and was mourned by the medical corps as a "fearless and diligent officer, an honest and highminded gentleman, and an unselfish and disinterested philanthropist." (Journal of the Association of Military Surgeons, vol. XIV, No. 5.)

I will endeavor to send you some book of experiments on the gastric liquor, which will be somewhat of a guide to you in making your observations, which may be done with perfect ease and safety. It is stated, for example, that if several articles of food be taken into the stomach,



Joseph Lovell, surgeon-general of the United States army, 1818-36. (Original painting in surgeon-general's library, Washington, D. C.)

that it would digest all of *one kind* first, then all of a second, and so on, and that this is the cause of the bad effects of a variety of food at the same meal. Suppose a man eat beef, potatoes, fish, cabbage, and pudding, it is expected that he will first digest all the beef, the others in the mean-

time remaining untouched; then all the pudding, then all the potatoes, and lastly the cabbage. Now, it is thought if he eat a dozen articles, by the time the stomach has disposed of eight or ten, it will become exhausted, and the rest will be left to ferment and produce indigestion and its consequent evils. Could you make experiments to ascertain this, and also the digestibility of various articles? This alone would afford a most valuable paper for publication. I should be happy to receive an account of any experiments or observations you may make, and they will no doubt be very acceptable to the public.

The article did appear in the *Medical Recorder*¹⁰ early in 1825, but through an oversight on the part of some one was published as "A Case of Wounded Stomach, by Joseph Lovell, Surgeon-General, U. S. A." It is not stated how the error occurred, but toward the end of the same year (No. 4, page 840) this correction was inserted in the journal:

A mistake was made in stating that the case of wounded stomach produced by the penetration of a ball was communicated by Dr. Lovell for the January number of this year. It should have been mentioned as reported by Dr. William Beaumont, and also that it occurred at the post of Mackinac. We should be obliged to Dr. B. for any further particulars of the case, which was considered as highly interesting, instructive and well drawn up.

The Medical Society of Michigan Territory was the first to take recognition of Beaumont's article, making him an honorary member of the organization, as shown by the following extract from the proceedings of that organization:

DETROIT, March 3d, 1825.

Doct. William Beaumont, United States Army,

Michilimackinac.

SIR: It is with much pleasure that I hereby transmit to you an extract from the minutes of the Medical Society of this Territory, at a meeting held at the home of Capt. Woodworth, in the city of Detroit, on Monday, 7th ultimo:

"Dr. William Beaumont, of the United States Army, duly proposed by Dr. Pitcher, and unanimously elected by Ballot an honorary member of this Society."

Whereupon it was ordered that the Secretary be directed to inform Dr. Beaumont of his election as aforesaid.

I remain, Sir, with much respect your most ob. Servant,

JOHN S. WHITING,

Secretary of the Medical Society of the Territory of Michigan.

¹⁰ "The Medical Recorder of Original Papers and Intelligence in Medicine and Surgery," conducted by Samuel Calhoun, assisted by an association of physicians in Philadelphia, New York, Baltimore, and Norfolk. 1825, vol. VIII, No. 1, article III, page 14.

Beaumont now began to feel keenly his complete isolation, and realized the great difficulties that confronted him in conducting experiments under the conditions which prevailed at Mackinac. Not only had he no facilities for research, but there was not even a physician within a radius of many hundred miles from whom he could receive suggestions, or with whom he could exchange ideas—a factor of no little importance even in this day of unlimited facilities for research. He felt that some eastern post might offer him better facilities for taking advantage of the rare opportunity that had so unexpectedly fallen to his lot, and in all probability requested a transfer of the surgeon-general, for I find in the old files of the surgeon-general's office an order of February 2, 1825, to this effect: "When the troops at Mackinac shall be removed to Green Bay . . . you will be ordered to Ft. Niagara to the commanding officer for duty there." On May 10th, however, another order came, no doubt as a great disappointment to him, stating that, "as the order for the removal of the troops from Mackinac has been countermanded, it will, of course, be impracticable for you to leave the post at present." Thereupon he commenced at Mackinac in a desultory way his first series of gastric experiments, but a solution to the problem of a transfer was evidently soon found by the surgeon-general, for he was shortly ordered to Fort Niagara, and in June we find him actively engaged in the hospital there. This being no great distance from Plattsburgh, the girlhood home of his wife, Mrs. Beaumont and the children¹¹ went on to that place to await future developments.

In the meantime he continued to prosecute his experiments until the month of August, when they came to a sudden termination through a most unexpected occurrence. In July Beaumont had requested a furlough of two months, with the evident intention of first visiting his family at Plattsburgh and then exhibiting St. Martin to some of the prominent scientists of that day. He received a communication from the War Department July 22d. granting a furlough for two months, "provided a citizen can be obtained to attend the post at the compensation authorized by the army regulation." All necessary arrangements were completed, and he left Niagara, accompanied by Alexis, stopping first at Burlington, Vermont, and then going on to Plattsburgh. They had been here but a very short time, when the close proximity of the

¹¹ Sarah, aged 2 years, and William W., aged 3 months.

Canadian border and the scenes of his boyhood proved an irresistible temptation to St. Martin, and he took "French leave" of his benefactor. This possibility seems not to have occurred to Beaumont, in spite of his knowledge of human nature in general and the wily ways of the voyageur in particular. Naturally he was broken-hearted over his loss, and made every possible effort to learn of the whereabouts of his truant, but at the expiration of his furlough he had obtained no clew concerning him, and was compelled to return to his duties at Niagara broken in spirit, but seeking consolation in the thought that his protege might fall into the hands of some one better fitted than himself for the important work of clearing up the knotty problems of gastric digestion.

Undaunted by this experience, he decided to give to the world the result of the few observations that he had been able to make, and sent a series of experiments to Mr. Webster, publisher of the *Medical Recorder*, saying:

Enclosed I send you the result of a few experiments carefully made upon the gastric fluids of the Stomach of Alexis St. Martin, the circumstances of which were communicated by Dr. Jos. Lovell, Surgeon Genl. U. S. A., and published in the 29th number of the *Med. Recorder* for Jan., 1825, and, if you think them worthy to be published, they are entirely at your disposal.¹²

I regret very much that it is not in my power to offer more varied and satisfactory results, but, unfortunately for me (tho fortunately perhaps for some more capable person than myself to make experiments), he has absconded and gone to Canada, at the very time I was commencing a number of more interesting and important experiments upon the process of digestion and power of the gastric liquors, and I very much fear I shall not be able to recover possession of him again. He was unwilling to be experimented upon, though it caused him but little pain or distress. At the time he left me he was much in the same condition as when my report was made to the Surgn. Genl. in Sept., 1824, and by him subsequently communicated to you.

N. B.—I have other interesting cases, of some practical importance perhaps, recorded on my journal of practice, which I should have no objections to communicate if I could bring myself to a belief that they would be acceptable and well recd. by the public.

This series of experiments numbered four, in which he noted the length of time required for the digestion of various articles of food suspended in the stomach by a silk string, which he could introduce and withdraw at pleasure, thus noting the changes in these sub-

¹² Published in the *Medical Recorder*, January, 1826, No. 33, page 94.

stances from time to time. He determined "the natural warmth of the stomach" by introducing the glass portion of a thermometer, marking the height of the mercury on the glass and then placing it on the graduated scale. He compared the length of time of digestion of certain articles in the stomach and in vials containing gastric juice at the body temperature, agitated from time to time to imitate the gastric peristalsis. He found that the digestion took place more rapidly in the stomach than in the vial after the first half hour, that some meats digested more slowly than others because the texture was closer, etc. Even these incomplete experiments assured him that the old theories of maceration and putrefaction were insufficient to explain the processes that he had observed, and that the gastric secretion possessed innate solvent powers.

But now his dreams and ambitions of aiding in the solution of the important problems of digestion were a thing of the past, and his whole attention was again claimed by the routine military duties at Fort Niagara. One incident especially in his life at this frontier post is well worthy of careful consideration.

A trial by court-martial, which took place at this time, and in which Beaumont figured as the chief witness, excited general interest in army circles, and especially among members of the medical staff. It seems that on the morning of June 21, 1825, Lieutenant Griswold reported himself sick and was bled by Dr. Beaumont and given medicine, with the result that he recovered promptly from the symptoms of which he was complaining. He returned to his post, complaining of no further indisposition, but continued to neglect his duties at the expense of two of his fellow-officers, Lieutenants Russell and Morris. Their patience was finally exhausted, and they complained to the commanding officer on July 3d of Griswold's evasion of duty, whereupon he was informed that he must either do his duty or report to the surgeon. "Reduced to this dilemma, Lieutenant Griswold had but two alternatives left—either to admit the imposition and go on duty, or successfully persevere in the game of deception he had been playing; too willfully obstinate for the first, and, thinking himself capable perhaps of the last, he renewed his efforts and made an unsuccessful attempt." He therefore chose to return to the surgeon, complaining of his arm where he had been bled. Though Beaumont could find nothing, he took him on the sick list with a view to observing him carefully. Griswold then began complaining of all

manner of "nondescript sensations." Beaumont made numerous efforts to locate a cause for the lieutenant's complaints, but, not succeeding, came to the conclusion that he was a malingerer. In this connection he wrote:

Resolved never to be made the tacit medium of deception, nor the convenient organ of official falsehood, I determined neither to let the case pass unnoticed or waive my duty of making a correct report to the commanding officer. Viewing the case as novel and unprecedented, artfully calculated to evade proof and requiring more than ordinary means and management for detection, I consulted my duty to government and my professional character only, and at once resolved upon the course to be pursued, fully aware of the delicacy and difficulties of deciding judiciously upon the first case of feigned sickness in an officer that had ever occurred within the sphere of my official duty. . . . Under these circumstances and impressions, I found I had an extremely delicate and disagreeable duty to perform, and, to demonstrate the correctness of my belief and enable me to form a final opinion, I resolved to prescribe a powerful dose of medicine for him, in the effect of which, if taken as directed, there could be no mistake. I did so. Prepared and left with him, with directions, an emetic-cathartic of 15 or 20 grains of calomel and 5 or 6 grains of tartar emetic. Whether he took the medicine as directed, I am unable to say, not staying to administer or see him take it. I visited him at his quarters frequently in the course of the day, but discovered no effects of medicine upon him. I found him at each of my visits during the day sitting at his table or window, reading or writing, appearing very comfortable and undisturbed. In the afternoon of the same day, about 3 or 4 o'clock, just after a shower, while the atmosphere was yet cloudy and damp, and the ground wet, I saw him out of his Quarters, walking about the garrison, with no other protection from the weather than his usual apparel, which occasioned me to remark, "If Mr. Griswold had taken medicine as I directed him that morning, he would have swelled jaws and a sore mouth for his imprudence." I visited him the next morning, saw no appearance of the operation of the medicine, neither did he complain of any soreness of his throat or mouth. . . . Being fully convinced from the preceding circumstances and observations that he was not then sick, neither had been since the 25th of June, I immediately left his room, without making any suggestions to or receiving any intimations from him of his ability or inability to do his duty, and without any remarks struck him off my report, marked him fit for duty, and reported him to the commanding officer. . . . Having conscientiously discharged my duty to government and Lieutenant Griswold on the morning of the 8th of July, I had no more to do with his official conduct. Whether he went to the office and saw or was informed of my report, or, judging from my last visit, that his situation was not tenable with impunity, is best known to himself. Sufficient be it for the occasion, he resumed his salutiferous faculties, dressed himself, and went on duty

immediately after I had sent in my morning report, and never after, while at this post, exhibited the least indisposition to my knowledge or belief until the time of his trial.

Griswold was placed under arrest, tried by court-martial, and found guilty, "to be dismissed from the service," in spite of the fact that the very officers who had complained of his shirking his duties, and who knew all of the circumstances of the case, came to the rescue of their comrade finally, and endeavored to give him immunity through favorable evidence. The sentence of the court-martial was disapproved by President Adams, and was reversed by the "Old Man Eloquent" in General Order No. 9, issued February 18, 1826.¹³ The president, in submitting his disapproval, stated:

It is at least very questionable whether the finding of the Court is warranted by the evidence in the face of the record. With regard to the only charges which, even if proved, could justify the severity of the Court's final sentence—namely, the third and fourth—the evidence before the Court was contradictory. Two unimpeached witnesses testify to facts which, if credited, show that the unfitness for duty by indisposition of Lieutenant Griswold at the time specified in the charges was real and not pretended. The facts are indeed otherwise stated by Assistant-Surgeon Beaumont, but the finding of the accused guilty by the Court on these charges appears to rest more upon the professional opinion of the surgeon than upon his statement of facts, shaken as that must be by the testimony of Lieutenant Russell and Lieutenant Morris.

The testimony of Brevet-Major Thompson and that of Assistant-Surgeon Beaumont both bear internal marks of excited feelings, impairing their credibility. The former was properly excluded by the Court from acting as prosecutor for misconduct pending the trial, and Surgeon Beaumont states an experiment as having been made by himself upon Lieutenant Griswold of more than doubtful propriety in the relations of a medical adviser to his patient. A medicine of violent operation, administered by a physician to a man whom he believes to be in full health, but who is taking his professional advice, is a very improper test of the sincerity of the patient's complaints, and the avowal of it as of a transaction justifiable in itself discloses a mind warped by ill-will, or insensible to its own relative duties.

It is needless to describe the effect of these strictures on the sensibilities of Dr. Beaumont. Pride and honor were two of his chief qualifications and his constant boast. Through this sweeping order of the highest tribunal of the land he felt that both had been

¹³ Files of the War Department at Washington, room 254. By courtesy of the adjutant-general.

leveled in the dust. His duty was clear, and he determined at once on his course of action in the matter. He first made a number of applications to the president for a court of inquiry to determine whether the facts in the case justified the president in such treatment as he had meted out to him, but, not succeeding in this, prepared a public reply to the "president's animadversions," evidently without the slightest regard for the results that it might have on his future career. When certain that he was in the right, no thought of self ever deterred him from giving expression to his opinion, no matter how lofty the position of him who had given offense. The following note, yellow with age, was found in the files of the War Department:

Eight weeks have elapsed, and my repeated applications for a court of inquiry not yet noticed by the proper authority, I consider farther delay injustice to my own character, and am most imperiously required, by every principle of honour and feeling of manliness, to give circulation to the following statement coextensively with the president's animadversions upon my conduct, as promulgated in his order of February 18, 1826, with a view to correct erroneous impressions and remove any undue prejudice that may have existed in consequence of said order.

The statement, which follows in part, was issued at Fort Niagara, New York, May 8, 1826, in the form of a circular¹⁴ of about four thousand words, and was executed with all the fearlessness and courage of one convinced that he was pleading in the cause of justice.

Considering my official reputation and moral character egregiously and unjustly assailed under General Order of February 18, 1826, and believing the Heads of Departments to have been imposed upon by misrepresentations and total perversions of truth, I consider it due to myself and the Government, and demanded by justice, to give an explanation, with a view to correct the abuse and expose the imposition.

Silence under such circumstances would be cowardice, and submission meanness indeed, suffering falsehood and error to preponderate over truth and correctness, to the total subversion of good order and correct discipline, and entire destruction of military pride and laudable ambition.

In submitting the following statements, I am governed by the inflexible principles of truth, incited by a lively sense of self-respect, the good of the service and regard for the Medical Department, disavowing any other feeling of prejudice, excitement or ill-will than those inseparably connected with just abhorrence of falsehood, dissimulation and roguery.

Equal rights in a free Government are due to all; justice in a Military

¹⁴ Files of the War Department at Washington, room 254.

Department is at the disposal of a few. The first is my birthright as an American, the last is due me as an officer of the Army upon the common principles of honor and rectitude. I claim them both upon the fair and equitable grounds that every man (military in particular) is entitled to a candid hearing and careful investigation before being censured or condemned for supposed offences and misconduct. I applied for a Court of Inquiry, on the receipt of the Order, to investigate my conduct. Eight weeks have elapsed, and I am without an answer. My feelings are not callous; I have yet sense of honor sufficient not to rest easy under the imputation of baseness and discredit; neither is my mind so warped by ill-will, or so insensible to its own dignity, as to seek sly and silent revenge for its satisfaction. My reputation is dear to me; the wide spreading influence of that Order cannot be anticipated with indifference.

I ask a candid and patient perusal of this statement, every part of which I will substantiate if an opportunity be afforded me. Single and unsupported, save by truth and conscious rectitude, I ask but to be heard—then judged by the merits of the case. I seek not the aid of whining sympathy or bolsterous advocates. I offer no borrowed documentary influence to support my cause; by the merits or demerits of my own conduct I wish to rise or fall in the estimation of Government and the Heads of Departments.

It is presumed the Officers of the Army generally have seen and read the President's remarks under General Order No. 9 for 1826, in which my testimony before a Court Martial for the trial of Lt. E. B. Griswold is severely censured, my character for truth and candor impeached, and my Disposition and Professional judgment implicated. Whether the inferences drawn from the face of the records of the Court be correct and warranted by the evidence thereon exhibited, I presume not to offer an opinion, but that the final conclusions are as unjust as they are severe, I am able and ready to substantiate.

The character of the Court, the nature of the charges, the universal findings, and corresponding sentence of that Court are sufficient justifications of my conduct, and ample protection to my character from general censure.

Whether the plan adopted, either in a moral or professional point of view, be justifiable or not, I leave for medical men and candid judges to decide. It was salutary, and had the intended effect of returning Lt. Griswold to his duty without prejudice to his health or constitution; neither is it of very great moment with me whether a successful experiment be of less or more than doubtful propriety that speedily restores a soldier from the sick report to the effective service of the government, be he private, non com. or commissioned officer; neither do I think it of very great consequence whether it be done *secundum artem*, *secundum naturam*, or *terrorem*, provided it be well done.

It may not be amiss here to remark that, so far from having administered a medicine of violent operation to a man whom I then believed (and have ever since) to be in full health, I neither required Lt. Gris-

would to take, believed he did take or had any intention of taking the medicine left with him, but, on the contrary, believed he studied to deceive by pretending to have taken it and then representing its effects. It was impossible to prove he did not feel those strange, indescribable sensations, but I know he could not disguise the effects of the medicine if taken. With this view I prescribed the calomel and emetic tartar. . . .

And no consideration can ever warp my mind from its fixed principles of acting honestly and independently in the discharge of its relative duties. Should I again, an hundred times, be placed in a similar situation, I would do as in this case I have done; fearless of censure, reproach, or temporary discredit, regarding far more the sanctity of an oath than either the applause or disapprobation of the highest earthly tribunal, considering Integrity, Faithfulness, and Fidelity to my God, my Conscience and my Country paramount to every other consideration.

My testimony was confined to facts that transpired between the 2d and 9th of July, and no other; was made upon the firm basis of truth, accurately identified with time and circumstances mentioned in the 3d and 4th charges, with a perfect recollection of facts, corroborated by the Morning Reports of the Garrison, needing not the aid of fortuitous events and equivocal memory to substantiate it. . . .

Treacherous indeed must have been their memories who could not have readily distinguished between the healthful enjoyments and festive associations of a convivial scene on the 4th of July and the more grave and sober acts of sympathetic kindness bestowed upon a friend on the 22d and 23d of June, and still more truant and pitiable his recollection who, after having officially complained of specific grievances and impositions on 3d of July, should forget that time and the occurrence of the very cause which induced him to make that complaint—viz., Lt. Griswold's evasion of duty between the 26th and 30th of June.

Yet, from the strangely defective recollection and extraordinary extraneous testimony, made to preponderate (tho it did not even refer to the facts or time specified in said charges), my professional opinion was shaken, my conduct as a witness and my disposition as a medical adviser severely animadverted upon by the President of the United States, by whose Veto and a few waves of his pen the sentence of an honourable Court-Martial is made void, and my reputation stigmatized throughout the army, without prospects of extenuation or retrieve, but by the aid of lenient charity, or through the more honorable medium of official reconsideration. I have respectfully claimed the last.

His verbose circular evidently received the scant consideration on the part of the chief executive that he anticipated it would,¹⁵ but it served to convey his ideas on the subject to his friends in the army and operated as a safety valve for his pent-up feelings.

¹⁵It is interesting to note that, in spite of this episode, Beaumont was commissioned "surgeon" by President Adams on November 28, 1826.

Shortly after this episode he received orders "to be in readiness to accompany the troops from Sacketts Harbor and Niagara to Green Bay, and to have all medical supplies under his charge carefully packed for transportation." He replied that he would be in readiness at the appointed time, and requested permission "to prescribe for the citizens of Green Bay whenever necessity required it, they being entirely dependent upon army surgeons for medical aid and assistance." While there was a paragraph in the army regulations at this time forbidding medical officers of the corps to engage in private practice, permission was usually granted post surgeons on application to render professional aid to citizens under such conditions as those which prevailed at Green Bay. This regulation had been in existence since 1814, but was not enforced until Lovell was made surgeon-general. He afterward explained, in response to Surgeon McMahon's inquiry, that the enforcement of this regulation was not intended to prevent acts of humanity on the part of surgeons, but simply "to prevent neglect of duty by entering extremely into it [private practice], as well as an improper application of public property, which often occurred." Beaumont's detachment soon¹⁶ got under way, and arrived at Fort Howard early in June. On the 18th of this month he wrote to Washington: "Due regard for the comforts of the sick placed under my charge requires that a timely representation of their destitute condition be made, with a view to its future amelioration." He found the hospital department "entirely destitute of every means of comfort, save medicine," and asked that the hospital equipment at Sacketts Harbor be transferred to Green Bay, which was promptly granted.

The life at Green Bay, Michigan Territory, was not new to him, for much the same conditions prevailed here as at Mackinac—even the same traditions. The place was founded in 1634 by Jean Nicolle when he was sent out by Champlain to discover a short route to China. Marquette, Joliet, Allouez, and Tonti had played important roles here as they had at Mackinac. At the close of the French and Indian war the settlement fell into the hands of the English, and so remained until after the War of 1812. The fur companies for many decades had branch houses at La Baye Verte,

¹⁶ His last communication from Niagara to the War Department is under the date of May 8, 1826. He evidently left his family to follow later, for I find recorded in the family Bible the death of his little son, William, at Plattsburgh on October 14, 1826.

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as it was called by the French, and the brigades sent out in the fall from Mackinac to the Mississippi country passed here and filled the air with chansons of the voyageur. At the beginning of the War of 1812 Colonel Dickson came here, after aiding in the capture of Mackinac, with his Indian allies, among whom was the famous chief Black Hawk. This point was the center of an Indian country of many tribes—the Menominees, Winnebagoes, Foxes, Chippewas, Sauks, and others—and in the immediate vicinity were more than 3,000 savages and as many more belonging to the adjoining tribes. When peace was declared with England and Americans took possession, these savages were in an ugly mood as the result of their great losses from the war—their crops had failed, they had lost their cattle, and the fur trade had been destroyed. They were prepared to lay all of the blame at the door of their new masters. There was scant chance, therefore, of maintaining peace among them under such conditions. In view of the ugly mood of the Indians and the importance of Green Bay as a trading center, it was deemed advisable to place a garrison at this point, and in 1816 Fort Howard was built just across the river, together with a government trading post and an Indian agency. The fort was inclosed in a stockade of timber thirty feet high, inclosing the usual type of barracks, block-houses, and officers' quarters, except those of the surgeon and quartermaster, which were built outside of the inclosure. Many years elapsed before the Indians could be reconciled to their new condition, and many acts of violence were committed by them. On one occasion the post surgeon, W. S. Madison, was ambushed and killed by a Chippewa Indian. In 1825 Lewis Cass, governor of Michigan Territory, succeeded in making at Prairie du Chien a treaty of peace with the Sioux, Sauks, Chippewas, Foxes, Winnebagoes, and Menominees, but within a year the treaty had been broken, and the Winnebagoes, who throughout had been more or less discontented, had found a *casus belli*.

Upon Beaumont's arrival here there were already undercurrents and mutterings of an Indian outbreak. The fomentation continued until the spring of 1827, when the tribe began committing outrages on the whites, and found sufficient courage to wipe out a family of seven. With this taste of blood, Chief Red Bird and his warriors started on the war path. Detachments of soldiers were promptly sent out from Forts Crawford, Snelling, and Howard, while Gover-

nor Cass himself proceeded to St. Louis to obtain aid from Jefferson Barracks. With this array of troops practically surrounding the savages, they soon realized the futility of further opposition, and Red Bird and his band made a dramatic surrender to Major Whistler's forces, to which Beaumont was attached. The Indian chief approached, carrying a flag of truce, singing his death knell, and casting a handful of dust over his shoulder to indicate that he gave up his life as freely. His only request was that he and his braves should not be put in chains. He was taken prisoner and sent to Prairie du Chien, where he died later. Two of his accomplices were condemned to be hung, but were pardoned by President Adams. This put an end, for a time at least, to Indian outrages in this section.

On returning to the fort from the interesting scenes that he had just witnessed, Beaumont entered into correspondence¹⁷ with Dr. Lovell concerning the question of vaccine and vaccination, which from an historical standpoint should be of some interest. On September 18, 1827, he wrote:

Sense of duty and common benevolence urge me most respectfully to request a fresh supply of vaccine infection to be forwarded to this post as soon as practicable. Accident alone has deprived me at this time of any efficient matter. The importance as well as necessity of having it on hand in a country like this, subject at all times to the incursion of the smallpox from the continual passing and repassing of wandering Indians and Canadian voyageurs, will doubtless be duly appreciated. I verily hope that some fresh and genuine infection be forthcoming immediately, so as to reach me before the close of the fall navigation of the lakes.

To this the surgeon-general responded on October 5th: "Agreeably to your request, I herewith inclose you a crust of vaccine virus, the only one on hand, and in a few days another supply will be forwarded." On January 31, 1828, Beaumont acknowledged the receipt of these packages, saying:

I have the honour to acknowledge the receipt of your two communications, containing each a Vaccine crust—the one dated October 25th this day, and that of Novem. 3d on the 11th instant, per express Via Chicago. I am apprehensive that, from some cause or other, the virus is all destroyed, inasmuch as immediately upon receiving the first package (which, by the by, was the last forwarded from the Department) I vaccinated a number of young and healthy subjects, none of which took effect. I repeated it several times, with the same result; no appearance of the disease could be produced by it.

¹⁷ Files in surgeon-general's office.

I have this day vaccinated several with the last received (first forwarded), but do not expect any effects from it. Does frost destroy the virus? If so, it must have been destroyed in coming from Detroit to this place by express, the weather being extremely cold. And as it will be impossible to send any to this Post in the winter season, therefore I respectfully request that some more may be forwarded soon as the season will permit, so as to arrive here by the first vessel from Detroit in the spring.¹⁸

Fearing that the vaccine was not being properly administered, Dr. Lovell sent another crust, with directions for using: "The introduction of a small portion of crust softened with a little warm water, after allowing the puncture to bleed pretty freely, has been found most effectual in securing success; or making half a dozen pretty deep incisions with the edge of the lancet and crossing them in the same way, thus [indicating the customary cross incisions], and covering them well with the matter."

About this same time glad tidings came concerning the whereabouts of the truant Alexis. Practically two years had elapsed since he took his unceremonious departure, and from that time nothing had been heard of his whereabouts. Soon after his disappearance, Dr. Beaumont communicated with his friends in the employ of the American Fur Company, urging them to be constantly on the outlook for St. Martin, and to report to him immediately on learning his rendezvous. W. W. Matthews, whose annual duty it was to go into the interior of Canada for the purpose of employing voyageurs, had just returned to Mackinac from such an expedition, and wrote Dr. Beaumont:

While in Canada last winter I succeeded in finding your ungrateful boy, Alexis St. Martin. He is married, and lives about twelve miles back from Berthier at a place called LaChalaupe. He is poor and miserable beyond description, and his wound is worse than when he left you. The distance from Montreal to where he lives is fifty-seven miles. I did all I could to bring him up, but could not succeed, but my endeavors cost me \$14. I will be obliged if you will let me know by return of boat whether I shall do anything more to get him back, and how I shall get my money back, as the company will not allow it to me.

¹⁸ During the winter months Green Bay was practically cut off from the world. Mail was delivered from Detroit by a soldier only twice in six months. It is said that a private route was established between Fort Howard and Fort Wayne, a distance of three hundred miles, after which mail was delivered about once a month. Moses Hardwick, a sturdy frontiersman, carried the mail from Detroit to Green Bay from 1817 to 1824, and each time, especially in the winter, was compelled to fight his way through packs of wolves, burdened with mail pouch and loaded musket. ("Historic Green Bay.")

The money was evidently promptly sent to Mr. Matthews, together with an authorization to get hold of St. Martin if possible, for a few days later another letter came:

I received your favor of the 15th inst., inclosing \$14, the amount of my disbursements in finding Alexis St. Martin. There will be no difficulty in getting him back at any reasonable price, providing you will employ his wife (!) also. He is miserably poor, and will remain so while he lives unless he comes back to you. I think you had better write to me in New York, requesting me to engage Alexis and his wife to come up and remain with you one or two years. I will bring them up to Mackinac in the company's boats, and charge as low as possible. Dr. Caldwell saw him when he was in [Canada?] last, and wishes very much to get him to remain with him.

While this news encouraged Dr. Beaumont to hope that he might again have Alexis with him for the purpose of conducting further experiments, much time elapsed before any more information was forthcoming. In the meantime he received orders to join the Fifth Regiment at Fort Crawford, also in Michigan Territory. He left Fort Howard with some reluctance, for he had formed many friendships in the garrison and in the little village across the river. In after years he paid several visits to Green Bay to look after property which he owned, and to visit relatives whom he had induced to come here.¹⁹ It is said that many years after he took his departure from this post the old French settlers were proud to recall the days of intimate relationship with "Le bon doc-teur who mak' de mer-a-cle." His good wife, too, through her domestic and social tendencies, had made herself much beloved among both citizens and soldiers, and her house was the rendezvous of those who sought the best and highest in the social life of the military post. It is said that she was fond of such modern classics as Scott, Cooper, Irving, and Byron, and that her greatest delight was to read Shakespeare to her little family group and a circle of intimate friends while they busied themselves with needle and thread. Her renditions of the author's plays were of rare excellence, in spite of the fact that, Quaker-like, she had never entered a theater. Such were their congenial surroundings when the Beaumont family left Fort Howard. On August 10, 1826, he reported their arrival at the new post on the upper Mississippi.²⁰

¹⁹ Quite a colony of Plattsburgh people emigrated to Green Bay in 1834.

²⁰ A daughter, Lucretia, was born at Fort Howard on July 26, 1827.

CHAPTER VII.

1828-1833.

Almost two years had elapsed since receiving the news of Alexis' whereabouts from Mr. Matthews, and in the meantime the officers of the fur company had been making every possible effort to bring him back to his benefactor. They were unremitting in their zeal to see him again serving the man to whom he owed so much, and toward whom he had proven himself so ungrateful. Without the efforts of Ramsay Crooks, W. W. Matthews, and William Morrison, St. Martin's case would have been lost to science. To them, therefore, belongs much credit, which, so far as I know, has never been accorded them, except by Beaumont himself, for this important chapter in the history of physiology of digestion.

During Alexis' absence of four years he had married and had become the father of two children. He had worked hard to support his family as a voyageur in the employ of the Hudson Bay Fur Company, and was sent by them into the Indian country of Canada, where he suffered many privations. In spite of all this, he had remained robust and well. Dr. Beaumont's comment on Alexis' condition at this time was as follows:

After considerable difficulty, and at great expense to me, they succeeded in engaging him and transported him from lower Canada, with his wife and two children, to me at Fort Crawford, Prairie du Chien, Upper Mississippi, a distance of nearly two thousand miles, in August, 1829. His stomach and side were in a similar condition as when he left me in 1825. The aperture was open and his health good.

He now entered my service, and I commenced another series of experiments on the stomach and gastric fluids, and continued them interruptedly until March, 1831. During this time, in the intervals of experimenting, he performed all the duties of a common servant, chopping wood, carrying burthens, etc., with little or no suffering or inconvenience from his wound. He laboured constantly, became the father of more children, and enjoyed as good health and as much vigour as men in general. He subsisted on crude food in abundant quantities, except when on prescribed diet for particular experimental purposes and under special observance.

Beaumont states elsewhere that he gave him at this time "800 livres annually, clothed and subsisted him and his family."

Now that his dream was again realized, Dr. Beaumont lost no time in beginning anew his experiments on the stomach of St. Martin. With no laboratory equipment but a thermometer, a few open-mouth vials, and a sand bath, he conducted at this isolated military post a series of observations on digestion which have not been excelled even under more favorable conditions and surroundings. How exact these observations were can best be determined by an examination of his manuscript. From a comparison of his old manuscript and notes with his publication, one finds that these investigations were made "in the true spirit of enquiry," without any "particular hypothesis to support," and that he "honestly recorded the result of each experiment exactly as it occurred." Between December 6, 1829, and April 9, 1831, there were recorded fifty-six experiments. He took up the train of thought just where he had left off four years before, with a series "to ascertain the variation in temperature in the interior of the stomach under different circumstances and conditions of the system and vicissitudes of the atmosphere." Eight experiments were recorded by him on this particular point, of which No. 1 is a fair example:

Dec. 6, 1829. At 9 o'clock, A. M., I introduced the glass tube of a Thermometer (Fahrenheit's) through the artificial opening into the stomach, in a healthy and empty condition, nearly the whole length of the stem. In six or eight minutes the mercury became stationary at 98°. Weather cloudy, damp, and almost raining; ground wet, muddy and thawing. Wind S. and mild. Thermometer, in a North exposure, 63°. Commenced raining at 11 o'clock, A. M. and continued all day, with oppressive atmosphere.

He concluded from this series that "the variations of the atmosphere produce effects on the temperature of the stomach, a dry atmosphere increasing and a humid one diminishing it; that the ordinary temperature of the stomach is about 100° F.; that there is probably some difference of temperature in different regions of the stomach, it being higher at the pyloric than at the splenic end." Two of these experiments showed that the heat of the stomach was increased during the active period of digestion, but subsequent ones showed the temperature to be the same in its full and empty state.

He now started out "to ascertain whether the gastric juice began accumulating in the stomach during periods of fasting, or even

from the immediate or direct influence of hunger." There were fourteen of these experiments, of which No. 12 is an average :

March 13, 1830. At 10 o'clock, A. M., stomach empty, introduced tube, but was unable to obtain any gastric juice. On the application of a few crumbs of bread to the inner surface of the stomach, the juice began slowly to accumulate and flow through the tube. The crumbs of bread adhered to the mucous coat, soon became soft, and began to dissolve and digest. On viewing the villous membrane before applying the bread crumbs, the mucous coat and subjacent follicles only could be observed; but immediately afterwards small, sharp papillae and minute lucid points, situated in the interstices of and less than the mucous follicles, became visible, from which exuded a clear, transparent liquor. It then began to run through the tube.

These observations led him to the conclusion that "the stomach contains no gastric juice in the free state where aliment is not present," that "any digestible or irritating substances, when applied to the internal coat, excites the action of the gastric vessels," that "even the application of the tube used in withdrawing the fluid was sufficient to excite its flow." He took issue with those who maintained that the gastric juice was discharged into the stomach during a fast. The result of one of these experiments caused him to believe that "in febrile diathesis very little or no gastric juice is secreted," and that for this reason food should be withheld in febrile complaints.

The majority of his subsequent investigations "were instituted with the view of ascertaining the relative difference between natural and artificial digestion; to demonstrate the performance of digestion out of the stomach with the gastric juice, and also the continuation of the natural process when taken out during the period of chymification," as indicated, for example, in the following experiment, No. 24:

Dec. 14, 1829. At 1 o'clock, P. M., I took one and a half ounces of gastric juice fresh from the stomach, after eighteen hours' fasting, into an open mouthed vial, put into it twelve drachms recently salted beef (boiled), and placed it in a basin of water on a sand bath, and kept it at about 100° (Fahrenheit), with frequent gentle agitation. Digestion commenced in a short time on the surface of the meat, and progressed in that manner uniformly for about six hours, when its solvent action seemed to cease. The meat was at this time nearly half dissolved; the texture of the central portion considerably loosened and tender, resembling the same kind of aliment when ejected, partly digested, from the stomach hours after being swallowed, as frequently seen in cases of indigestion.

The vial continuing in the same situation, its contents varied considerable in their sensible qualities in twenty-four hours; the digested portion separated into a reddish brown precipitate and whey-coloured fluid.

I now separated the undigested from the chymous portion by filtration through thin muslin. When squeezed dry, it weighed five drachms, two scruples, and eight grains, which, deducted from the twelve drachms of meat put in at first, leaves six drachms and twelve grains digested in twelve fluid-drachms of gastric juice.

This experiment was conducted with as much precision and integrity of observation as possible, with the temperature of the digesting bath kept as near blood heat as was practicable to regulate and continue artificial warmth, the Thermometer varying during the time from 90° to 100°.

While "it took twelve drachms of gastric juice to digest six drachms and twelve grains of aliment," he felt that no definite conclusion should be drawn from this experiment on account of the great variation in the secretion under different circumstances. He expresses the opinion "that different kinds of diet require different proportions of gastric juice for their solution."

In experiment No. 25 he found "that a quantity of aliment taken out of the stomach twenty minutes after having been eaten had a sufficient amount of gastric juice to insure its perfect digestion when placed on the bath." In experiment No. 26 he demonstrated the "comparative digestibility of animal and vegetable diet," and showed "that vegetables are less easily disposed of by the gastric organs than animal or farinaceous substances." In subsequent experiments he demonstrated the coagulability of milk by the gastric juice, and its importance in connection with the digestion of milk; the digestion of different kinds of meat, the importance of meat in the action of the gastric juice, and showed that when gastric secretion into which meat had been placed was kept in a cool place, digestion ceased, but began again when transferred to the bath. In another experiment he calls attention to "the effect of violent passion on the digestive apparatus." The necessity of a perfect comminution of the articles of diet was cleverly demonstrated in experiment No. 34, as follows:

March 14. At 8 o'clock 15 mins. introduced two ounces of rare roasted beef, suspended by a string, into the stomach, and at the same time put one drachm of the same kind of meat into twelve drachms of gastric juice, contained in a vial, and put it into his bosom. The piece in his stomach, examined every hour till 12 o'clock, M., exhibited an uniform, but very slow process of digestion, confined entirely to the surface of the meat. In four hours about half of it only was dissolved and gone. That

in the bosom, at the same time, digested still slower, owing probably to the circumstances that the fluid in the vial had been taken out when the stomach was in a morbid condition, and had been permitted to get cold, even to the freezing point. This last circumstance, however, was probably of less importance than the other. The meat in the stomach was too much confined by the string, was not permitted to move about freely in the gastric fluids by the natural motions of the stomach, and consequently did not digest so fast as it otherwise would have done. Another circumstance or two may also have contributed to interrupt the progress of digestion, such as anger and impatience, which were manifested by the subject during this experiment.

His conclusions following experiment No. 35 contain some interesting statements.

In this experiment it took two hours for the digestion of a meal of bread and milk, something shorter than the usual time for the disposal of an ordinary meal. For those who have healthy and unsophisticated stomachs, milk appears to be one of the best articles of diet we possess. It is less stimulating than flesh, and more nutritious than vegetables. For persons who are disposed to pyrexial complaints, and who are not obliged to perform hard and exhausting labour, it is the most appropriate diet. But the stomach is a creature of habit. It can become accustomed to any kind of diet; and sudden changes are liable to derange its healthy actions. To those accustomed to what is called high living, such as strong meats, strong drinks, and high seasoned food of all kinds, the transition to a milk diet, which contains a considerably lowered stimulation, would probably be an imprudent change. When necessary, the change should be so gradual that the stomach should by degrees become accommodated to it.

Throughout the entire series of experiments he was suspending various articles of diet in the stomach, noting carefully the time required for the digestion of each, and concluded this lot of experiments with a series of ten, intended to demonstrate, if possible, "what effects were produced by the bile and pancreatic juice when added to chyme," making the following notation:

Not being able to procure human bile in a pure state, I obtained some beef's gall, and for pancreatic juice substituted diluted muriatic acid (one scruple acid to six ounces water). I was induced to use this acid from a resemblance observed between its taste and that of the pancreatic juice, and not being able to obtain any of that fluid at the time. These experiments are certainly very imperfect, but, such as they are, I submit them to the public. They may tend to pave the way to more perfect experiments on these fluids.

It is needless to say that he arrived at no satisfactory conclu-

sions concerning the bile and pancreatic juice. In summing up this entire series of fifty-six experiments, he says:

The preceding Experiments, I think, plainly demonstrate the solvent properties of the gastric juice. When aliment is submitted to it out of the stomach, its operation is rather slower than when the process of digestion is assisted by the natural warmth and motion of that organ. One reason probably is the difficulty of maintaining a bath at the exact necessary temperature, and another one may present itself in the impossibility of perfectly imitating the motions of the stomach. With all these disadvantages, however, chyme formed in this way presents the same uniform, sensible appearance as that which is formed in the stomach by natural process.

That the cold gastric juice should not act at all, or but very imperfectly, on aliment is no proof, in my opinion, that it does not possess solvent powers, even on the admission that it was a debatable question. There are but few chemical combinations that do not require caloric to effect their operations, and none perhaps that are not facilitated by it. Some, and indeed many of them, require an intense heat. I am under the impression, though I have never fairly tested the truth of it, that gastric juice would, in a sufficient length of time, act on aliment in a cold state. But I am not anxious to contend for any extraordinary or unnecessary powers of this fluid, nor is it necessary to prove that it will act on cold substances or in cold situations. It is perfectly manifest that its operation is that of a chemical agent, that it dissolves aliment out of the stomach when the warmth and motions of that organ are imitated, and that it changes the various and heterogeneous articles submitted to its action to an uniform, homogeneous semi-fluid, varying, however, slightly in color and consistence, according to the aliment used.

While in the midst of these interesting observations, Alexis again determined to go to Canada, but this time not without the consent of his benefactor. Dr. Beaumont, referring to this event, says:

In the spring of 1831 circumstances made it expedient for him to return with his family from Prairie du Chien to Lower Canada again. I relinquished his engagements to me for the time on a promise that he would return when required, and gave him an outfit for himself, wife, and children. They started in an open canoe via the Mississippi, passing by St. Louis, Mo., ascended the Ohio river, then crossed the state of Ohio to the lakes, and descended Lake Erie, Ontario, and the River St. Lawrence to Montreal, where they arrived in June.

Unlike the previous occasion on which St. Martin took his departure, Dr. Beaumont felt certain that he would be able to obtain his services again for further experimentation. He felt,

however, that he had gone about as far as he could without the assistance of others, and determined to get in touch, if possible, with men trained in the art of investigation, and especially on the subject of chemistry. He was aware that the best chemists, in fact the only physiological chemists, were then in Europe, and so he applied for a furlough of one year, to begin in September, 1831, for the purpose of going abroad with Alexis. He was gratified to receive on May 23, 1831, the following communication from Surgeon-General Lovell:

I have just returned to Washington after an absence of several weeks, and submitted your application for a furlough for one year to the secretary of war, who has directed it to be given at such time as you may wish. Nearly every officer of the department being on duty, and but one at a post, with but two exceptions, it will take some time to relieve you, but I will endeavor to do it by the time you mention—that is, “on or before the last of September, next.” I should be much pleased to see Alexis on your route to the East.

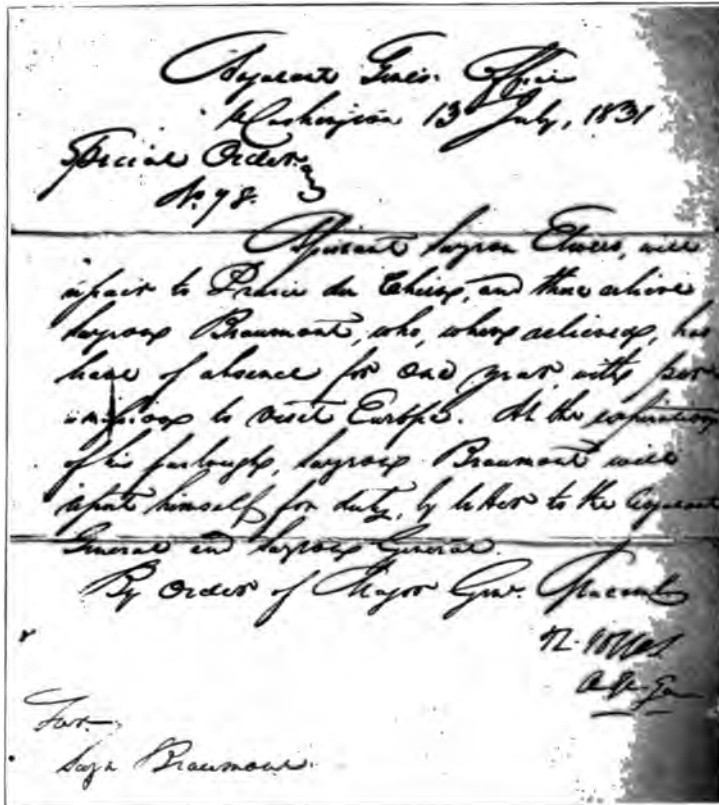
Shortly after this, “Special Order No. 78” was sent out from the adjutant-general’s office by order of Major-General Macomb to the effect that “Assistant-Surgeon Elwers will repair to Prairie du Chien, and there relieve Surgeon Beaumont, who, when relieved, has leave of absence for one year, with permission to visit Europe. At the expiration of his furlough, Surgeon Beaumont will report himself for duty by letter to the Adjutant-General and Surgeon-General.”

Beaumont was doubtless elated over the fact that he would now be able, through the aid of the European scientists, to fathom some of the problems of digestion which up to this time had remained insurmountable. Everything was in readiness, therefore, for his departure, when, to his great disappointment, there was issued by order of the same authority on October 24, 1831, “Special Order No. 127:”

The public service will not permit the absence of Surgeon Beaumont from duty at this time; accordingly the indulgence intended to have been accorded to him in Special Order No. 78 is recalled until otherwise directed.

The “public service,” in all probability, had reference to an Indian outbreak, which was brewing about this time. Black Hawk, a noted chief of the Sac and Fox Indians, who had fought on the side of the British in the War of 1812, now began to resent what

he considered the unlawful encroachment of the whites on his territory, and refused to submit to a treaty made by the other chiefs of his tribe in the previous year at Prairie du Chien, ceding all of the lands east of the Mississippi to the whites. During the year 1831 the savages were pretty completely humbled by General



Special order No. 78, July 13, 1831, granting a furlough for one year, with permission to visit Europe, which Beaumont was "permitted merely to anticipate, but not to realize."

Gaines, but in the spring of 1832 they renewed their activities, and the Black Hawk Indian war began in reality. The scenes of their outrages were in upper Illinois and Michigan. Therefore all of the regular troops from Forts Howard, Crawford, and Dearborn were centered at Fort Dearborn, with a view to crushing them as

quickly as possible. It was feared that other tribes, especially the Winnebagoes, might join the belligerent Sacs and Foxes, but through much diplomacy and maneuvering such an alliance was prevented. The war continued with vigor through the spring and summer of 1832, but in two battles fought on July 21st and August 2d the Indians were so thoroughly whipped and routed that a complete cessation of hostilities was brought about, and Beaumont returned with his regiment to Prairie du Chien.

It was anticipated in the beginning of the hostilities that the forces in the West would not be sufficient to cope with the Indians, and troops were ordered to the scene from Fortress Monroe and New York harbor under the command of General Winfield Scott. Seven companies of these troops left Buffalo for Detroit on July 3d on the steamer *Henry Clay*. On the following day a man became suddenly ill on board with symptoms of Asiatic cholera, and for the first time in the history of the country the disease was introduced here. Just after their arrival at Detroit a second case occurred, and, in spite of every effort to prevent the spread of the disease, cases multiplied rapidly, and within ten days thirty-four deaths had occurred. Soldiers deserted in the panic which ensued and spread the disease broadcast. It was transmitted to Chicago by steamboats from Detroit, and there the victims were numbered by the hundreds. Troops marching from Chicago to the Mississippi, to aid those at Fort Crawford in the warfare against the Indians, carried the dreaded disease to Prairie du Chien and other points along the upper Mississippi. The conflict with the Indians was over before these troops reached the scene of battle, but they had met even a more fatal foe. Thus Dr. Beaumont's detention at Fort Crawford gave him a wide experience in two campaigns—that against the Indians and that against the cholera. In fact, the Black Hawk war was afterward known in army circles as the "cholera campaign."¹ His experience with the disease was evidently quite large, and he manifested considerable interest in the study of it. Some of his views on the subject are unique, to say the least. The following thoughts were found scribbled on a fragment of paper, and were probably written about this time:

The Greater proportional numbers of deaths in the cholera epidemics are, in my opinion, caused more by fright and presentiment of death than from the fatal tendency of violence of the disease.

¹ Brown's "Medical Department of the United States Army."

Like a snake watching and writhing for its prey, the Cholera lurks unseen through the pestiferous and malarious atmosphere, stealing upon human beings and thickly populated places, and gluts its cadaverous appetite more by the fears and dread it occasions than by its otherwise naturally fatal effects upon human life.

The consternation and terror excited in community when the cholera makes its appearance is like that extraordinary instinct which compels animals and birds to thrust themselves into the open mouth of the serpent, whose almost only power to destroy consists in the fatal charm or terrific influence of the most distressing fear and dread which it is capable of inflicting on its intended victim.

The general panic, like a phantom, pursues the public imagination; community becomes alarmed; individuals cannot abstain from the most distressing foreboding and sickening apprehensions of an attack and fatal termination; some fly from the first scenes of its occurrence, with a view of escaping its ravages; but from the effects of their fears, like the charm'd bird, flying in the utmost distress and agony from bush to bush and constantly approximating the dreaded destruction, they only approach nearer and nearer to the fatal influence of the dreaded disease, and finally thrust themselves resignedly into the gaping jaws of death, as if to rescue their minds or imaginations from the most agonizing pains of fear and dread.

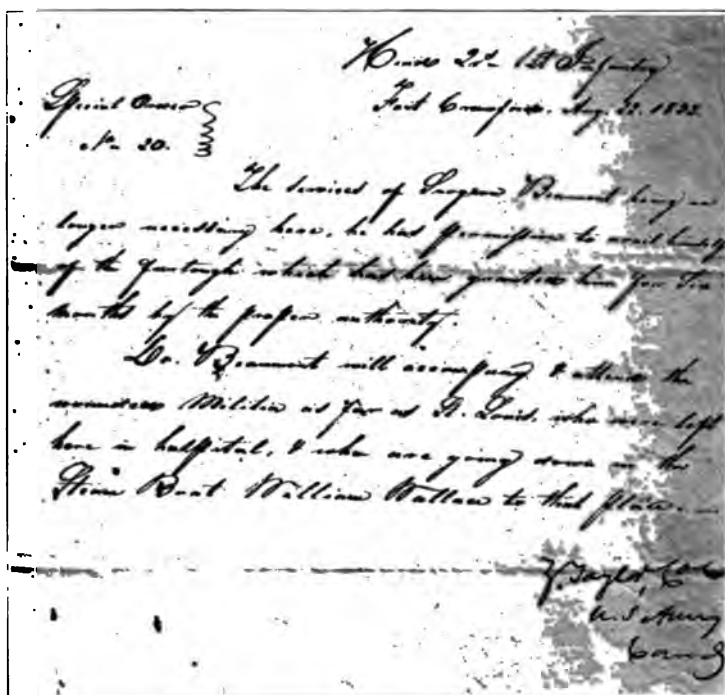
So long as the general panic be unexcited and individuals remain unalarmed, and reason has control of intellect, the disease is little or no more fatal than many other epidemics. But when community becomes alarmed, and the public imagination dwells upon its fatal influence, and individuals constantly forebode death and general destruction, great fatality ensues, thousands sacrifice their rational faculties to their fears and become an easy prey to this fatally dreaded disease.

In this connection it will not be amiss to present some notes jotted down by him on the "History of the Intermittent Fever As It Prevailed at Prairie du Chien in the Summer and Fall of 1830," in which he shows a very clear insight into some of the causative factors of malaria, though unaware of its true cause.

In the month of July a few irregular intermittents made their appearance, both among the soldiers and inhabitants of the place, in company with mild remittent Dysenteries and Diarrhoeas. The weather during this month was extremely hot and dry, with almost constant south winds. The Mississippi river had been very high during the months of May and June, so as to overflow much of the prairie, but subsided rapidly in July, leaving numerous stagnant ponds and marshes exposed to the excessive heat of the sun. About the first of August the river rose rapidly again, so as to overflow its borders considerably, and fill the ponds and marshes again, but soon fell more rapidly than before, the hot and dry weather continuing, without any rain. Frequent heavy fogs came over early in

the mornings during the forepart of the month, with occasional sudden changes of the hot, dry wind from the south to the west and north, continuing for a few hours only very chilly and damp.

In the first week in August Intermittents began to be more frequent and severe, but quite obscure in their type at first, appearing very commonly in the form of Remittents, accompanied with Dysenteric symptoms; but in a few days would put on their true character of regular Intermit-



Special order No. 20, August 22, 1832, signed by Zachary Taylor, colonel in the United States army, granting Beaumont permission to avail himself of a furlough for six months.

tents—at first of the Tertian type, but in the third week assumed the Quotidian type, generally with severity of attacks and obstinacy of symptoms; and cases increasing rapidly from 10 to 20 daily.

Early in June he had again been permitted to anticipate a furlough for the purpose of visiting Europe, and his hopes were again raised by "Special Order No. 79" from the adjutant-general's office:

A furlough of six months, with permission to visit Europe, is hereby granted Surgeon Beaumont, to take effect as soon as his service can be dispensed with.

With the Indian war now ended and the cholera epidemic under control, the public service no longer required Dr. Beaumont's presence at Fort Crawford, so that on August 22, 1832, Colonel Zachary Taylor, then in command of the United States forces at Fort Crawford, issued the final order which permitted his departure from the Northwest:

The services of Surgeon Beaumont being no longer necessary here, he has permission to avail himself of the furlough which has been granted him for six months by the proper authority. Dr. Beaumont will accompany and attend the wounded militia as far as St. Louis who were left here in the hospitals and who are going down in the steamboat William Wallace to that place.

He evidently left the fort on the following day with the full intention of spending his furlough abroad, for we find among his papers a letter of introduction, dated August 24, 1832, from James G. Soulard, then of Galena, Ill., whom he met on board the William Wallace, to his uncle, Mr. Benjamin A. Soulard, of Paris:

I have just returned from a short trip, and on the same boat was my friend, Dr. Beaumont, a distinguished surgeon in the United States Army. He told me that he was about to leave for Europe and that he should pass some time in Paris. He is taking with him a man who is said to have recovered from the most extraordinary wound ever known up to the present time. I take pleasure in availing myself of this opportunity of introducing him to you as a very eminent man, worthy of your confidence. I foresee, however, that considerable difficulty will arise when you meet, as he does not speak any French and you speak no English, but I trust that you will find some means of communicating with each other, as he is a lovable and dignified man possessed of great knowledge.

After escorting the wounded militia safely to St. Louis, he promptly made his way toward Plattsburgh with his family, and in September reported himself there, "in quest of his man, St. Martin."

The home-coming of the Beaumonts on this occasion is well described by their niece,² then a mere child, living in Plattsburgh. She describes the home of her childhood to which the Beaumonts came:

²"A Flash From Memory," by Mrs. Elizabeth Smith Martin in the *Plattsburgh Republican* of June 6, 1896.



Dr. Beaumont and his family at about the time of their return to Plattsburgh. (From a small painting executed in 1832-33, in possession of Mrs. Sarah Beaumont Keim.)

A homely, bizarre bit of architecture, gable fronting on the turn of Margaret into Broad street. . . . No coat of paint in our remembrance had ever marred the gray coloring of its woody outside fibre, to which time had already given a soft, velvety tinge. . . . The year 1834³ closed up our residence in this ancient landmark, yet deserves another note from one of its inmates, as it brought back to the home fold, from a far off western military post, Fort Crawford, Dr. William Beaumont, his interesting wife and trio of young children.

Many years had come and gone since the last visit of Mrs. Beaumont

³Should be 1832.

to her Lake Champlain home, and the event seemed like some jubilant holiday to all concerned. The trio had but recently passed through the fearful ordeal of an Indian raid at Prairie du Chien, called the "Black Hawk War" in military parlance, and, although of brief duration, the raid had its horrors outside the fort. These laid strong hold on the nervous system of the madame, by nature the most cheery, brave, and buoyant among heroic women. But sight of tomahawk, scalping knife, and bleeding scalps carried outside by painted fiends wrought mischief on her gentle and sympathetic temperament. Like her young relative a brief term of years before, she at last found happy retreat among kith and kin, who also shared in the glad jubilation. To this day the writer cannot solve the problem as to the how and where this increased domestic population found stow away accommodation in the small, low browed domicile. Yet there never seemed lack of room, enough and to spare, while ever from morning to night fall good cheer and boncomradeship kept carnival.

Dr. Beaumont's greatest pleasure on this occasion was found in Alexis' prompt appearance on the scene according to promise. The Doctor lost no time in again beginning his investigations, but before doing so he endeavored to force Alexis' loyalty through the medium of a written agreement. On October 16, 1832, the following legal contract was drawn up between the two parties, the like of which has never been duplicated in history:

Articles of agreement and Covenant, indented, made, concluded and agreed upon at Plattsburgh, in the County of Clinton and State of New York, the Nineteenth day of October, in the year of our Lord one thousand eight hundred and thirty-two, between William Beaumont, Surgeon in the Army of the United States of America, of the one part, and Alexis St. Martin, Laborer, of Berthier, in the Province of Lower Canada, of the other part, as follows, to wit:

The said Alexis St. Martin, for the consideration herein mentioned, doth covenant, promise and agree to and with the said William Beaumont, his heirs, executors, administrators and assigns, by these presents in manner following—that is to say, that he, the said Alexis, shall and will for and during the full term of one year, to begin and to be accounted from the date of these presents, serve, abide, and continue with the said William Beaumont, wherever he shall go or travel, or reside in any part of the world, his covenant Servant, and diligently and faithfully, and according to the utmost of his power, skill and knowledge, exercise and employ himself in and do and perform such service and business matters and things whatsoever as the said William shall from time to time order, direct, and appoint to and for the most profit and advantage of the said William, and likewise be just and true and faithful to the said William in all things and in all respects.

And the said Alexis, for the consideration herein after mentioned, further specially covenants and agrees with said William that he, the said

In witness whereof as well the said William Beaumont
 as the said Alexis St. Martin have signed their respective
 names to this the day year first above written in the presence of
 each other & of the subscribing witnesses here to in the presence
 of Jonathan Douglass Woodward Esquire the returning officer
 Public.

Jonathan Woodward
 Thomas Green
 Benjamin Nagary

Wm Beaumont
 Alexis St. Martin

United States of America
 State of New York
 Chautau County ss. I the Subscriber, Notary Public in and for
 said State, duly Licensed and sworn and authorized in
 all respects to act as such Notary Public do hereby Certify and
 attest that the said William Beaumont and Alexis St.
 Martin who are both personally known to me, executed
 signed sealed and delivered the above instrument in
 writing in my presence, and in the presence of each
 other & in the presence of the above named subscribing
 witnesses who also subscribed their names as witnesses
 to the due execution of said instrument in my pres-
 ence & the presence of each other, and also in the
 presence of both of said parties. In testimony whereof
 I for the due manifestation whereof I have hereunto
 signed my name and affixed my seal of office
 as Notary Public at Plattsburgh aforesaid this man-
 tenth day of October in the year of our Lord one
 thousand eight hundred and thirty two.

Jonathan Woodward
 Notary Public

Rec'd on the above contract forty dollars being the amount advanced on the
 second by William Beaumont.

Jonathan Woodward
 Notary Public

Alexis St. Martin

Rec'd on the above forty dollars April 23rd 1833

Thomas Green
 Benjamin Nagary

Alexis St. Martin

Rec'd November 7th 1833 fifty seven dollars on
 the above contract -

William
 Beaumont

Alexis St. Martin

The last page of a contract made on October 19, 1832, between Dr. Beaumont and St. Martin, granting the use of the latter's stomach for experimental purpose. At the bottom are seen Alexis' acknowledgments of payments, aggregating \$147.

Alexis, will at all times during said term, when thereto directed or required by said William, submit to, assist and promote by all means in his power such Physiological or Medical experiments as the said William shall direct or cause to be made on or in the Stomach of him, the said Alexis, either through or by the means of the aperture or opening thereto in the side of him, the said Alexis, or otherwise, and will obey, suffer and comply with all reasonable and proper orders or experiments of the said William in relation thereto, and in relation to the exhibiting and showing of his said Stomach, and the powers and properties thereof, and of the appurtenances, and powers, properties, situation and state of the contents thereof. It being intended and understood both by said William and said Alexis that the facilities and means afforded by the wounds of the said Alexis in his side and stomach shall be reasonably and properly used and exhibited at all times upon the request or direction of said William for the purposes of science and scientific improvements, the furtherance of knowledge in regard to the power, properties and capacity of the human Stomach.

And in consideration of the premises, and of the several matters and things by the said Alexis to be performed, suffered and done as aforesaid, according to the true intent and meaning of the premises, and on condition that the said Alexis shall and does perform the same on his part, according to the true intent and meaning thereof, and not otherwise, the said William Beaumont doth for himself, his heirs, executors and administrators covenant, promise and agree to and with the said Alexis by these presents that the said William shall and will at all times during said term find and provide unto and for the said Alexis suitable, convenient rooms or house when with and in the service of the said William, and also defray the necessary expenses, and furnish the said Alexis good, suitable and sufficient subsistence, washing, lodging and wearing apparel when journeying with and at the request and directions of the said William. And also well and truly pay, or cause to be paid, unto the said Alexis, his executors or administrators, the just and full sum of one hundred and fifty dollars lawful money of the United States of America in Manner following, to wit: the sum of forty dollars, parcel thereof, to be paid to said Alexis at or within one day after the execution of these presents, and the residue thereof, being one hundred and ten dollars, to be paid on personal application to said William, his executors or administrators at the expiration of the said term, which will be one year from the date hereof.

In witness whereof, as well the said Beaumont as the said Alexis St. Martin have hereunto set their respective hands and seals, the day and year first herein written, in the presence of each other and in the presence of Jonathan Douglas Woodward, Esquire, the subscribing notary Public.

J. DOUGLAS WOODWARD.
THOMAS GREEN.
BENJ. J. MOORES.

WM. BEAUMONT.
his
ALEXIS X ST. MARTIN.
mark.

UNITED STATES OF AMERICA,
STATE OF NEW YORK,
CLINTON COUNTY.

I, the subscriber, a Notary Public in and for said State, duly Commissioned and sworn and authorized in all respects to act as such Notary Public, do hereby certify and attest that the William Beaumont and Alexis St. Martin, who are both personally known to me, executed and signed and delivered the above instrument in writing in my presence and in the presence of each other, and in the presence of the above named subscribing witnesses, who also subscribed their names as witnesses to the due execution of said instrument in my presence and in the presence of each other, and also in the presence of both of said parties.

In testimony whereof and for the due manifestation whereof, I have hereunto signed my name and affixed my seal of office as Notary Public, at Plattsburgh aforesaid, this Nineteenth day of October, in the year of our Lord one thousand Eight hundred and thirty-two.

J. DOUGLAS WOODWARD, Notary Public.

On taking his departure from Plattsburgh with Alexis, with the intention, no doubt, of going abroad, he left a little missive for his wife which he entitled "Pill Cochie's" parting admonition to his dear old wife Debh:"

Take good care of thyself and the children; use every means to preserve their health and thine own; be neighborly and sociable with all thy good friends; eat their good dinners and drink their good tea when you have a fair chance. Be not melancholy or much depressed at my absence; drive evil forebodings from thy mind, and anticipate my happy return in the Spring. Make all around you happy by the exercise of your natural vivacity and cheerfulness of disposition.

Bestow a goodly share of your care and attention upon Sarah; you can scarcely be too vigilant in the daily observance of the improvement of her mind and morals, in the correction of every little irregularity of her disposition. Excite her emulation to excel in virtue and usefulness; Examine her improvements from day to day—every day. Suffer not too much indulgence. But, above all, guard well her associations, and watch the communions she holds with herself and her playmates.

Suffer not Lucretia to be too much petted, but rather check her natural vanity and affection. Dont let the "young gentleman" get the upper hand of you, but apply the rod effectually when necessary to coerce obedience to your authority.

If Dr. Beaumont really had any intention of devoting his six months' furlough to a sojourn abroad, he seems to have decided

⁴A pet name of Indian derivation, used by his wife. Mrs. Keim informs me that it was her father's custom, upon leaving home, to place loving missives for the various members of the family where they would be readily found.

reading the works of Spallanzani, Philip, Magendie, Broussais, Leuret and Lassaigne, Gmelin and Tiedemann, and others, he copied verbatim that which impressed him because of its conformity with his own observations, as well as that with which he wished to take issue. And as he copied he would intersperse the subject matter with parenthetical remarks, such as "true," "verily so," "certainly," "right," "even so," "so in Alexis." "this description exactly answers to the appearance of the mucous coats of my Frenchman," "your humble servant believes that the partial solution of food," etc., "more time would have completed the solution, and more patience and closer observation would have confirmed the fact, no doubt," "so says Stevens of Edinburgh." "this last is hard to be believed, and the potato and parsnip difficult to be understood." His systematic and accurate methods are well shown in a "Synoptical Index of Different Authors on Digestion, Stomach, Gastric Juice, Etc.," which he kept much as one keeps a card index system today.

Life in Washington was much to his liking after years of trial and toil in military garrisons on the wild frontiers, surrounded by savages who were constantly haunting the forts in paint and feathers, and not infrequently parading with the scalps of their victims mounted on poles. How different at the capital—four months more of leisure to spend just as he wished, unhampered by routine duties, surrounded by books and men of note in medicine, law, and diplomacy, and with Alexis St. Martin at his beck and call. His work had already received recognition from such men as Edward Everett, Thomas Hart Benton, Lewis Cass, and others, and he received many invitations to dine and commune with the country's most illustrious men. Dr. Lovell was now able to render much assistance to him, and did so freely. There is evidence that they discussed every phase of the work together, and that the surgeon-general gave him much valuable advice. Through him Alexis was made sergeant of a "detachment of orderlies stationed at the War Department in Washington, commanded by Lieutenant S. Cooper," and received payment for his services at the rate of \$12 per month, an allowance of \$2.50 per month for clothing, and ten cents per day for subsistence. This was done in order to make lighter the burdens of Dr. Beaumont, on whom Alexis was constantly making demands beyond the terms of their agreement. The "descriptive Role of Sergeant Alexis St. Martin" states that he is

28 years old, has dark eyes, dark hair, dark complexion, and is five feet five inches high, that he was born in Berthier, Lower Canada, that his occupation is that of laborer, and that he enlisted on December 1, 1832, for a period of five years.

As soon as all of these details were accomplished, Dr. Beaumont started on his third series of observations, and between December 1, 1832, and March 1, 1833, recorded 116 experiments, some of which were simply in confirmation of those that had gone before—the testing of the temperature of the stomach when full, when fasting, when exercising, and when resting; the length of time required to digest various food substances, etc. Some experiments disproved the old theory of maceration, and in others he made an effort to imitate the gastric juice. Experiment No. 104, for instance, in which he tests the powers of a solution of muriatic and acetic acids, which at least simulated gastric juice in taste, revealed to him that “the gastric juice contains some principles inappreciable to the senses or to chemical tests.” He found that “when there are indications of disease on the coats of the stomach and on the tongue, digestion is consequently protracted.” Alexis, it seems, was very fond of alcohol, and at times drank immoderately. Accordingly, therefore, we find in connection with one of the experiments such a statement as, “the diseased appearance of the stomach at this examination was probably the effect of intoxication the day before.” While Dr. Beaumont had found that the “sense of hunger resides in the stomach, and is as well allayed by putting the food directly into the stomach as when the previous steps have been gone through with,” there is no indication that Alexis was ever satisfied to receive his whisky in this manner, but took the position that this was one appetite which could not be appeased by pouring it in through the opening in the stomach. It will be remembered, however, that Dr. Beaumont had also found that the “sense of taste is very essential to the proper digestion” in that it stimulated the flow of gastric juice. It is interesting to note that in many of these experiments in which the Doctor wished to have the vials kept at the body temperature, they were carried about by the hour in the axilla, evidently with the idea that there were certain forces in animal heat or body temperature which could not be obtained on the water bath.

CHAPTER VIII.

1833.

While in the midst of these researches he succeeded in enlisting the assistance of two of America's leading scientists, Robley Dunglison, professor of physiology in the medical department of the University of Virginia, and Benjamin Silliman, professor of chemistry in Yale University. The correspondence with these two gentlemen is of great historic interest, and I am glad to be able to present here, in full, copies of all the letters. Not infrequently one side of such correspondence is brought to light after some years, but seldom indeed is it possible to present the letters interchanged by two individuals after a period of more than seventy-five years. For this opportunity we have again to thank Dr. Beaumont's remarkable traits of accuracy and method. Whenever he wrote a letter of some importance, he first scribbled a rough draft, interlining, erasing, and adding until the composition suited him, and then he would make a copy, filing away the rough draft for reference. This rendered his letters exceedingly difficult to decipher, and much time and care were required in the process. I have endeavored to reproduce them practically as I found them, and take this opportunity to state that allowances should be made for composition, use of capitals, punctuation, etc., in the letters of Dr. Beaumont, since these were not the exact copies of those that were forwarded.

Dr. Lovell had evidently written Professor Dunglison¹ on behalf of Dr. Beaumont, and received the following reply:

UNIVERSITY OF VIRGINIA, January 12, 1833.

For Dr. Lovell, Surgeon-General,

Washington City.

DEAR SIR: My friend Mr. Trist will explain to you the causes that have prevented me from witnessing and assisting at the experiments instituted

¹Robley Dunglison came to the University of Virginia in 1824 from England at 26 years of age, crossing the ocean in the *Competitor*. The voyage required four months, six weeks of which were spent beating about the English Channel. He was practically the founder of the medical department, and at different times served as secretary and chairman of the faculty. Dr. Dunglison soon took a high rank as teacher and writer, and was Mr. Jefferson's favorite physician. In 1833 he went to the University of Maryland as professor of therapeutics, and later to Jefferson College to take the chair of the Institutes of medicine. He died April 1, 1869, having made many important contributions to medicine. (Archives of University of Virginia.)



I shall be very anxious to see the results of your labors
 and am engaged in a work on the influence of physical factors
 on human health, and I expect on the influence of diet to obtain
 much useful information for your publication.

I will afford the greatest pleasure to hear from you at all
 times

Believe me, dear Sir,
 Very truly yours,
 Robley Dunglison

D W Beaumont.

Professor Robley Dunglison (photographed from an original painting in the halls of the University of Virginia) and part of a note to Beaumont.

by Dr. Beaumont and yourself on the interesting and rare case which is now and has been engaging your attention, as well as from expressing in person my high sense of the honor you do me by desiring that I should be in any manner associated with you. I had seen a detail of certain experiments by yourself and Dr. Beaumont on the subject of this case several years ago,² and had fully intended to notice them in a work on Human Physiology recently published by me, but the Journal was mislaid, and I could not refer to it in time. One of these experiments, if I recollect rightly, was on artificial digestion, and the result showed that a piece of corned beef experiences the same changes as when it was inserted through the wound into the interior of the Stomach; and another, that the vegetable substances underwent chymification in the stomach more speedily and thoroughly than different kinds of meat which were passed in at the same time. Both experiments were interesting as confirming the views of Spallanzani and the results of the experiments made at the Hospital La Charite of Paris on a female with a fistulous opening in the stomach, and those obtained by Helm, of Vienna, on two similar cases, as regards the effect of the juice contained in the Stomach in the solution of alimentary substances.

It would have been additionally instructive to have witnessed the effect of saliva only on the same Aliments out of the body for the purpose of deducing whether that fluid possesses the sole agency in digestion, as supposed by Montegre, or merely an adjuvant, as presumed by the best Physiologists; or what are the changes effected by it on the Aliment compared with those that result from the action of the compound fluid (formed of the various secretions from the supra-diaphragmatic portion of the alimentary canal and of the stomach itself) met with in the interior of that organ, and which was the solvent in your experiments.

The results of your second experiment impressed me forcibly, being somewhat at variance with the inferences of Gosse, Montegre, Magendie, and others from their experiments, to which reference is made in the first volume, page 955, of my Physiology, regarding the comparative digestibility of animal and vegetable substances. Since the period at which your first experiments were made you have, doubtless, instituted others, which may have led you to confirm or disprove your first obtained result.

It would be signally interesting to me to learn the comparative digestibility, as tested by this individual, of the great chemical divisions of Aliments—amylaceous, muclagenous, saccharine, aciduous, oily and fatty, caseous, gelatinous, and fibrinous—taking, as example of each, Starch (Arrow Root, sago, ordinary wheaten starch), Muclage or Gum (Gum Arabic), Sugar, Acidulous fruits (with and without the skins), Butter or Suet, Cheese (mild and pungent), Gelatine (Isinglass), Albumen (fluid and concrete, as in the raw and boiled white of egg), and Fibrine (formed by repeatedly macerating the slices of muscular flesh in water under 150° Fahrenheit), as well as of the individual articles forming these divisions

² *Medical Recorder*, containing first short series of experiments made at Mackinac.

when compared with each other. These experiments might be made either in the stomach or artificially, and it might be instructive to adopt both courses.

As regards the nature of the fluids met with in the stomach of fasting Animals, and to which, collectively, the term gastric juice has been applied, experiments exhibit great discrepancy. It would be gratifying to me to learn the general result of your Researches. Did Litmus Paper indicate the presence of any free acid or alkali? If acid, could it be discovered, by burning, whether the muriatic or Acetic was the one in question, or did the Fumes of Ammonia indicate the existence of either, or a solution of Nitrate of Silver that of the former? Did the fluid obtained from the stomach, whilst fasting, deprive putrid substances of their septic characters? Did it remove the flavor of certain aliments, as of wine? Did you examine it with the microscope—that least satisfactory of all methods for investigating the nature of animal fluids—and, if so, what were the appearances? Did it always coagulate milk? It would afford me great satisfaction also to learn the effect of subjecting pure Fibrine, Albumen, or Gelatine to the action of this fluid out of the stomach, and to see how far they experience mutations in their sensible and chemical properties. When the experiment is made on pure Fibrine, the Albumen contained in the gastric fluid may be precipitated by a solution of the Bichloride of Mercury. The precipitate is a compound of the salt of albumen, in the proportion of about one of the former to three or four of the latter, so that by drying the precipitate the quantity of Albumen in the fluid can be easily determined. If the fibrinous solution be now evaporated at a moderate heat until it forms a thick mass, and concentrated acetic be added, with the assistance of heat a tremulous jelly is formed, which is completely dissolved by the addition of warm water, provided the mass be simply fibrine; but if the Fibrine has experienced changes during the process of artificial digestion or chymification, different results will be obtained.

In like manner, if the artificial digestion has been accomplished on Albumen, provided the Albumen has experienced no conversion, the solution of Bichloride of Mercury will precipitate it, and the quantity of Albumen so precipitated may be compared with that subjected to the process of digestion.

Lastly, if Gelatine has been employed, the quantity remaining after digestion may be approximated by precipitating it with Tan, prepared by infusing an ounce of Gall nuts in a pint of water. The quantity of Gelatine in the precipitate may be roughly appreciated by considering that there are somewhat less than two parts of Tan to three of Gelatine.

In the case of the patient at La Charite, the food during its conversion into Chyme appeared to have acquired an increase of its gelatine and a substance in appearance fibrinous, but others have asserted that gelatine has not been met with in the chyme, which is scarcely comprehensible where gelatine has been the Aliment, as the conversion must have been total.

You will pardon me for the length of the preceding detail, every topic of which has probably suggested itself to you already. It will afford me great pleasure to learn any facts—which the Case has taught you and Dr. Beaumont—of a physiological character. I do not abandon the hope of being in Washington in the course of a few days. At present the roads from their roughness are almost impassible, but, if the frosty weather continues, they will be in order probably by the commencement of next week. The whole journey has now to be performed by land, and our Virginia Roads are proverbial for their badness. Should I, however, be prevented from visiting Washington, I may perhaps be permitted to request an account of your experiments and observations, in order that I may make all of them in a second edition of my work on Physiology, should one be demanded, or communicating them in your name to the American Philosophical Society, or both, should such be your desire.

I am with best respect,

Obediently yours,

ROBLEY DUNGLISON.

Conditions "under foot" improved within a few days, as Professor Dunglison prophesied, and he was soon able to make the trip from Charlottesville to Washington over the proverbially bad Virginia roads. He had the opportunity, therefore, to satisfy himself in person as to many of the points suggested in his letter, and to give Dr. Beaumont some valuable suggestions in the further conduct of his experiments. A careful perusal of the experiments made between January 24th (experiment No. 70) up to the end of this series shows that Beaumont carried out practically all of the suggestions offered him by Dunglison. The microscopic examinations were also made during Professor Dunglison's stay in Washington, and were conducted by him and Captain H. Smith, of the army. He concluded, however, that the microscopical examination of the gastric juice afforded very little information on the subject of digestion. What Dr. Beaumont most desired of Dunglison at this time was a careful chemical analysis in order to determine, if possible, those "solvent ingredients" which up to this time had baffled the chemists who had attempted the analysis of the gastric juice of both the human being and lower animals.

On January 25th Beaumont left a bottle of gastric juice, doubtless at Professor Dunglison's hotel on the day of his departure, with the following note, in which he thanks him profusely for his assistance, and in a subtle way requests Professor Dunglison not to anticipate him in the publication of any of the experiments that he had seen while in Washington:

Dr. Beaumont takes pleasure in acknowledging his high regard and thankfulness to Professor Dunglison for his kind and valuable assistance and lively interest taken in the prosecution of his Gastric Experiments, and hopes amply to be able to remunerate him for his generous exertions by affording him a more full and satisfactory view of the result of his observations when he shall have had time properly to collate and classify them.

The Bottle of Gastric juice is cheerfully submitted for chemical analysis, with a strong hope and expectation that Professor D. will succeed in obtaining very important and satisfactory results and communicate these in detail to Dr. Beaumont so soon as practically convenient.

Dr. B. is much indebted, and will be ever grateful, for the aid and instructions received from Professor D., and is disposed to reciprocate every generous desire, mutually to afford subjects for Physiological investigation and improvement so far as he is capable. Dr. B. hopes his feelings may be perfectly appreciated—similar confidence he could repose in but few—but he feels well aware that by Professor Dunglison he will never be improperly anticipated in his intentions, sooner or later, to publish the experiments collectively by premature communication to any Periodical Publication of partial results, whereby impressions of an undue transfer merit or demerit [?] from its original or collateral sources might be liable to be made upon the public mind. A simple notice of the case and the intention of publication may not be improper, and is not objectionable.

All communications and suggestions from Professor D. on this subject will be thankfully received, and gratefully, if not scientifically, appreciated and attended to.

WASHINGTON, D. C., 1 O. K., P. M., Friday, Jan. 25, 1833.

To this Dr. Dunglison promptly and courteously replied, putting at rest any fears entertained by Dr. Beaumont as to his publishing any part of the work.

UNIVERSITY OF VIRGINIA, January 29, 1833.

Dr. Beaumont, United States Service,

Washington City.

DEAR SIR: I received your letter so late that I was unable to answer it before I left Washington. I thank you very much for your Bottle of the gastric fluid, which I will examine at leisure, and be most happy to communicate the results as early as I conveniently can, as a trifling return for your kindness in permitting me to examine the case and to be associated with you in your experiments.

With regard to the publication of any results, you may rely upon me implicitly. I have but one desire in the prosecution of my profession—by teaching and by practice to benefit my fellow-men, and that can always be done with due credit without forestalling my coadjutors in the field of science, or arrogating to myself merit to which I may be but secondarily entitled. The praiseworthy manner in which you have entered your ex-

periments demands my thanks, as well as those of every lover of science, and I have no doubt that when complete they will add largely to our amount of useful knowledge.

I will with pleasure afford you every facility in the communication of the results of your labors to the public, and shall be quite satisfied to perform a secondary part. Certainly I shall not anticipate you. The field is yours, and I wish you, for your own sake, to tell it to the best account. By the bye, do me the favor, at your leisure, to experiment artificially with the saliva, acidulated with the phosphoric, the muriatic and acetic acids, and to note the results.³ They will be valuable as connected with the question on the agents of digestion raised by Montegre, and referred to at page 589 of my Physiology.

It will afford me sincere pleasure to hear from you at any time, and to find that your labors are duly appreciated by the liberal and enlightened members of our Profession, who unfortunately form but a small portion of the mass.

Tomorrow I hope to be able to institute experiments for detecting with accuracy the nature of the acid which gives character to the gastric fluid. The sensible properties and the rough chemical experiments made at Washington lead me to believe that it is the muriatic. This we shall fix with certainty, as well as the other great ingredients.

Believe me, dear sir, with great respect and esteem,

Yours truly,

ROBLEY DUNGLISON.

Without awaiting a reply to this letter, Dunglison sent another on February 6th, reporting the preliminary results of his chemical tests:

UNIVERSITY OF VIRGINIA, February 6, 1833.

To Dr. Beaumont, United States Service,

Washington City.

MY DEAR SIR: Since I last wrote to you, my friend and colleague, Professor Emmet and myself have examined the Bottle of Gastric fluid which I brought with me from Washington, and we have found it to contain free muriatic and Acetic acid, Phosphates and muriates, with bases of Potassa, Soda, Magnesia, and Lime, and an animal matter soluble in cold water, but insoluble in hot. We were satisfied, you will recollect, in Washington that free muriatic Acid was present, but I had no conception it existed to the amount met with in our experiments here. We distilled the gastric fluid when the free acids passed over, the salts and animal matter remaining in the retort. The quantity of Chloride of Silver thrown down on the addition of the Nitrate of Silver was surprising, but unfortunately the quantity of juice we possessed proved insufficient to estimate the precise amount of the ingredients, a matter, however, which I conceive to be of no great importance. Should you be able, however, to

³ "Beaumont's Experiments," No. 96, Plattsburgh edition, 1833.

accumulate for me half a pound of the Juice, and give it to Mr. Trist to send on to me, we may be capable of proceeding still farther. I am satisfied, however. I think it probable that the Acetic Acid is the great disinfecting agent. If you will take a drop or two of the strong Acetic Acid (Radical vinegar), and add it even to a wineglass of water, you will find it disinfects a putrid substance with great rapidity. Allow me to suggest to you to try a portion of animal substance (masticated by Alexis), half in a mixture about as sour as the real juice and the other half in the gastric juice, and observe the character of the solution effected in each.⁴ Suppose you take a wineglass and afterwards precipitate it by Tan.

By the way, in the number of the *American Journal of Medical Science* just issued you will see a Review of my Physiology, in which the writer accords with Dr. Jackson and others on the subject of stomachal digestion. There is a systematic obstinacy occasionally amongst Physiologists which requires time as well as evidence for its downfall, and one of the first things to be learned is to disinfect the mind of all bias, which is extremely difficult. Had I not been associated with you in our professional experiments and with my friend, Professor Emmet, in the chemical, I have no doubt it could have been said that I had determined to find certain results, and accordingly I had found them. You will, I am sure, do me the justice of saying that I endeavored to observe fairly.⁵

Your publication, which I hope will make its appearance soon, will upset, or ought to upset, this delusion on the subject of digestion, and I will back it so far as my feeble support can do so. Permit me to recommend to you, as a vehicle for publication, the *American Journal of Medical Science*, edited by my friend, Dr. Isaac Hays, of Philadelphia, who will be most happy to insert it, I am satisfied. It is in my opinion, and I believe in the opinion of the world in general, the best periodical on medical science published in this country.

It will afford me great pleasure to hear from you on this or any other subject.

In the meantime believe me to be, dear sir, with great respect and esteem,

Faithfully yours,

ROBLEY DUNGLISON.

To this Dr. Beaumont replied promptly, expressing the belief that the result of their work would ultimately overcome the "systematic obstinacy" of those who took issue with them.

WASHINGTON, 10 Feby., 1833.

To Prof. Dunglison,
University of Virginia.

DEAR SIR: I have the honor to acknowledge with pride, pleasure and satisfaction yrs. of the 29th ult., which would have been more promptly answered had not the delay been necessary to obtain results of the ex-

⁴ "Beaumont's Experiments," No. 104, Plattsburgh edition, 1833.

⁵ "Beaumont's Experiments," page 79, Plattsburgh edition, 1833.

periments you suggested. Your last surprised me in the act of complying with your request, and, having in part anticipated your last suggestion of experimenting with dilute muriatic and acetic acids, I will transmit them, imperfect as they be, and repeat the experiment according to your last suggestion soon as practicable and send you the result. The flattering manner in which you speak of my feeble efforts to promote Physiological science by diligent prosecution of my experiments, and your readiness to aid me in my prosecution, is very gratifying indeed to my feelings, and inspires the utmost confidence in the candor and correctness of your motives, fairness of your views, and liberality of your sentiments. The result of your Chemical analysis of the Bottle of Gastric juice is highly satisfactory and important, and shall be duly appreciated and applied. It will afford me great pleasure to obtain and send you for further analysis another bottle of Gastric Juice as soon as I can collect it pure. Since you have been here I have seen the necessity, doubled my diligence, of presenting my experiments on different soluable aliments with even greater minuteness, if possible, than before, though now sensible of my inability to do strict justice to the subject from having so plainly observed your pre-eminent qualifications, talents, and tact of easily testing and readily finding correct and important results.

I most cheerfully submit to your examination the products of the experiments you suggested in yours of the 29th ult., together with my field notes (to borrow an expression) made on the occasion. I also send, through the kind agency of your very good friend, Mr. Trist, specimens of the products of several small and minute experiments on different articles of diet, which, should they be deemed of sufficient importance, I should like to have submitted to chemical analysis and to be informed of the results. I have just obtained the last no. of the *Am. Medl. and Physical Journal*, and have but hastily perused the review of your recent valuable Physiological work. Though the reviewer handles the subjects generally with gloved fingers, he seems inclined to pinch a little on some points, and fortunately that Stomach Digestion; and, though the suggestions advanced by you on that subject need nothing but their own correctness to support them, yet I think with your assistance we shall be able to afford the weapons not only to parry their criticisms, but to make them recoil with severity, if you choose, upon the authors themselves, rendering them effectually disinfecting agents of the systematic obstinacy of their selfish minds and Pseudo Physiological Theories on this subject. That [the views and theories?] of the Philadelphia Physiologists, as some others, on the subject of Stomach digestion and the Gastric juice are radically wrong, I have not the least doubt, but demonstrated and multiplied facts and experiments to prove, of which more hereafter.

In accordance with your first suggestion, I took 55 pts. of fresh secreted saliva and dilute Muriatic acid, reduced with water, as nearly as I could judge by the sense of taste, to the natural acid flavor of the gastric juice, and submitted to it a proportional qty. of the following vegetable substances—an entire square piece—10 grs. of boiled carrot, and also immersed

the same qties. and kinds of vegetables in saliva and acetic, and diluted to about the same Strength and flavor with the muriatic; and treated them with my other experiments on the bath of 100 Fahr. for 48 hours, and then took out and weighed the respective pieces. The carrot in the muriatic mixture had lost nothing, but remained whole and entire. The parsnip had lost 2 grs. in the acetous menstrum. The fluid of both remained unaltered in their soluable qualities and appearance. After continuing them on the bath, with frequent agitation, 72 hrs. longer, the Parsnip in the muriatic menstrum had lost 4 grns.—whether dissolved or its very soft and tender substance merely diffused thro this fluid, I was not able to determine. The carrot remained the same as when put in. The Parsnip acetic mixture had lost 6 grns. and the carrot 4, but appeared more to be masticated and diffused than dissolved or digested. I now mixed them all together, and continued to treat them on the bath 24 hrs. longer, at the end of which the whole remaining mass of vegetables weighed together 12 grs. only, having lost one-half in that time. The fluid appeared now little more than chymous, was rather turbid, and resembled, more than anything else I can compare it to, the famed "Philadelphia vegetable soup" made of "two potatoes and an onion, boiled to smash in $\frac{1}{2}$ qt. of water." I send you the product as it is. Please examine for yourself, and, if you choose, let me know your conclusion upon this as on the other subjects submitted, observing that after the mixture the wash of the vegetables become more evident and rapid. It occurred to me to mix the two acids together first, and then observe their effect on meats. Accordingly I mixed equal parts of the diluted acids and saliva. Into 3 drachms of this mixture immersed XX grs. lean broiled beefsteak unmasticated, but chopped fine with a knife, & for a comparison put the same qty. and kind of meat into 3 drachms Gastric juice, and placed them on the bath and treated them together for 6 hours. When the meat in the gastric juice was taken out and filtered dry, weighed 2 grs. only; that in the artificial menstrum was not diminished in weight at all, but had lost its fibrous form and became a jelly-like mass, thick and tremulous, like half dissolved glue—not converted into anything like chyme, nor bore much resemblance to the contents of the gastric solution. After digesting 8 hrs. longer on the bath, the meat in the gastric juice completely dissolved and that in the acid menstrum nearly so, a trace of jelly-like particles only remaining on the filter. The fluids now even a little more similar, though not alike—that of the gastric juice was opaque, of a light brown color, and afforded a dark brownish sediment on standing; the other was also opaque, of a dark reddish gray color, depositing no sediment. 3 drachms Infu. of gall added to the gastric portion threw down a fine, loose reddish brown precipitate, and afforded a semi-transparent liquor of similar color. 3 drachms of the Infu. added to the acid mixture converted the whole into loose coagula and suspended throughout the whole fluid mass, becoming finer by agitation and very slowly subsiding towards the bottom, and affording a clear, transparent, slightly yellowish fluid. I send them also for examination. I would send more similar experiments, but perhaps

they would not be of sufficient importance to excite your interest or merit your attention.

The Gastric juice shall be forthcoming as soon as possible to collect it in quantity and quality sufficient for your purpose.

I shall hasten the publication of my experiments as fast as my circumstances and abilities will permit, consistently with a view to future benefit to secure credit to myself. Shall be always happy to consult your judgment relative to it, and be ever grateful for your proffered assistance and friendly advice on the subject. Shall duly consider your suggestion of making Dr. Hays, of the *Am. Journal of Med. Science*, the medium of my publication. I expect soon to make an abstract report of some of my expts. to the Surgn. Genl., reserving the entire series for other and future arrangements, which to my limited ability seems an herculean labor. I shall attend to the experiments suggested in your last in due time, and communicate the result of my observations. I shall always feel gratified and grateful for any communications or suggestions you may be pleased to make on this or any other subject.

Please accept, Sir, the renewed assurances of my great respect and esteem, and believe me,

Yrs. truly and respectfully,

WM. BEAUMONT.

A few days later this was followed by another letter, entering into further details concerning the analyses:

WASHINGTON, Feb. 19, 1833.

*To Prof. Dunglison,
University of Virginia.*

DEAR SIR: Agreeably to promise, I have now the satisfaction of sending you another bottle of gastric juice for further investigation. I hope it will be safely received, and afford you an opportunity further to extend the highly important analysis so happily commenced with the first.

I have also with peculiar pleasure carefully experimented upon the masticated meat and gelatin, as suggested in your last letter, and herewith send the result of my observation. I hope you will excuse the awkward and unscientific manner in which they were made and here attempted to be described. To develop valuable facts is my chief aim and ambition, and, if I communicate such to you, even in my own style, I am confident they will be duly appreciated and kindly disposed of to the best advantage; and I have the peculiar satisfaction, and not only this satisfaction, but am happy and proud to assure you, so far as I have read and understand your very valuable treatise on Physiology, that the principles and suggestions and reasoning on the subject of the Gastric functions and fluids are generally most confirmed by my experiments, so far as I have been capable of observing.

I am well pleased indeed to have it in my power to assist in verifying the correctness of your theory, and irrefutably establishing physiological facts which have for ages divided the opinions and distracted views of

Physiologists, since the latter times have become fashionable sources of speculation, error or professional obstinacy. I shall continue most cheerfully to receive and faithfully attend to any suggestions you may be pleased to make while I remain here and at N. Y., if you see fit to communicate to me there. I expect to leave this for that city about the 5 or 6th of March.

The small square Phials contain the products of the gelatine treated with Gastric and Dilute muriatic and acetic acids, agreeably to your suggestion. The phials containing the similar products of the masticated meat accidentally got broken and spilt. I send the result of my observations, which I hope you will sufficiently comprehend. . . . Infusion of Nut galls added to the solution in the gastric juice threw down a fine reddish brown precipitate, and afforded an opaque fluid of a similar color. The same quantity of the Infusion added to the acid mixture converted the whole into loose coagula, and slowly threw down a more copious precipitate and left a clearer and thinner fluid, nearly transparent.

I took the same quantity of dry gelatine, and put them into the same kind and measures of gastric juice and dilute acids, and treated them after the same manner of the meat. In $5\frac{1}{2}$ hours the gelatine in the gastric was all dissolved.

The precipitates I have not disturbed to ascertain the definite weights. If it be of importance, it may be done after you remove it. Please direct to me at this place till the last of this month—after that to N. Y.

I am, Sir, with much esteem,

Respectfully yours, etc.,

WILLIAM BEAUMONT.

In the early part of March Dr. Beaumont made the official "abstract report" of his work to the surgeon-general, previously mentioned in his letter to Professor Dunglison. This report was prefaced by a general statement leading up to the experiments, which is so typical of the man, and which reveals so well the conscientious spirit in which he carried on his investigation, that I can not desist from reproducing it in part:

With an honest desire to contribute, if I may, a mite to the promotion of Medical Science, and in accordance with your wish and the general views of the Department under which I act, I have the honor very respectfully to submit for consideration the following experiments and observations upon the gastric fluid and functions of Digestion as made upon Alexis Saint Martin. . . .

He then describes the difficulties and vicissitudes under which he had worked during the past six years, with special reference to Alexis' inconstancy and idiosyncrasies, and proceeds:

These, with other cases not in my power to obviate and control, have prevented more satisfactory results perhaps, and delayed an earlier com-

munication of the subject. Having him now reëngaged for a season, I have the satisfaction of presenting to your favorable consideration the following experiments and observations as the result of my faithful, though feeble abilities, but diligent efforts, to contribute to the advancement of Physiological improvement.

From the vast number of treatises, observations and experiments that have been made on the subject of Digestion, almost from time immemorial to the present day, by the most illustrious and learned of the ancients, and the wisest and ablest Professors and Physiologists of modern times, it may perhaps be thought that these experiments and observations are altogether gratuitous, unnecessary and useless, many having already been communicated to the profession in far more scientific and satisfactory forms. But following the examples and guided by the precepts of the most eminent and useful of the profession, and having so rare and singular an opportunity, I cannot, in justice to my views of the importance of the subject, omit communicating such facts and observations as have been in my power to collect, however imperfect and unimportant they may appear, or feeble my ability to do it satisfactorily.

But in offering the following I can most truly assert that no favorite theory, system, or hypothesis, preconceived opinions or partiality for popular authority have had any influence in making or recording them.

A mere tyro in science, with a mind free from every bias, I commenced them, as it were, by accident, and continued desultorily to prosecute them, without regard to any particular arrangement, or the confirmation of anything save plain and palpable truths and physiological facts, aiming singly at the more perfect development of the nature of the Gastric juice and process of Digestion in the human Stomach, subjects which neither time, nor talents, nor labor, nor learning has yet satisfactorily illustrated.

If, in any degree, I succeed in thus contributing to the cause of science, I shall be satisfied with having bestowed my time and patience upon the subject, simply even to afford the materials for the Physiologists to cultivate and improve.

In the meantime Dr. Beaumont's furlough had expired, and he was ordered to New York city—doubtless at his own suggestion, for there seemed no particular need of his services there at that time. He probably thought that he would be able to gather some additional information from New York scientists. In order to make it possible to have Alexis with him and have his salary continued, a special order was issued from the adjutant's office to the effect that "a furlough of three months from the date hereof is hereby granted to Sergeant Alexis St. Martin, of the detachment of orderlies at the seat of government."

Shortly after his arrival there a letter came from Dr. Dunglison, in which it is interesting to note that, far from being able to "fix

with certainty . . . the other great ingredients," he had arrived at the conclusions "that the precise constituents of the gastric juice may never be accurately determined."

UNIVERSITY OF VIRGINIA, March 23, 1833.

To Dr. Beaumont, United States Army,

New York.

DEAR SIR: I am glad to find that your ardor in the prosecution of your interesting experiments continues unabated. Within these last few days I have received the letter and parcel you kindly sent me by Mr. Rives, which were delayed from some cause which I have not yet learned. I thank you much for your valuable present of the gastric [fluid] and the results of some of your other investigations. They prove that the fluid is not simply muriatic and acetic acids in dilution, as I knew before. It is probable, too, that the precise constituents that exist besides these Acids may never be accurately determined. I forgot to suggest to you in my last to assimilate your menstrum still more closely to the gastric fluid by adding a small quantity of Phosphate of soda, and seeing whether the soluble powers were at all modified. In the compound gastric fluid the organic constituents, I have no doubt, modifies the chemical action in a way that cannot be done by any of our artificial menstums. Still, your experiments appear to me to tend to the result at which we previously seemed to arrive—that the main gastric action is one of solution, not of chemical conversion. I should have been glad if you had separated by the filter the precipitate thrown down by the Bichloride before I added the infusion of galls, taking care to add no more Bichloride of mercury than is absolutely necessary to throw down the Albumen—that is, adding it only so long as a precipitate is thrown down.

On adding the infusion of galls to the gastric solution of gelatine, and making a similar experiment with gelatine dissolved simply in water to which no Bichloride has been added, and weighing the precipitate formed in the two cases, you would be able to see whether as much gelatine remained in the gastric solution as was contained in the aqueous solution, or whether a part might not have experienced conversion. If you have any Bichloride remaining in the solution after precipitating the Albumen, it would affect the Nutgalls. Perhaps you will be good enough to repeat your experiments with this view. I will do so if I have gastric juice enough. I feel anxious, however, to retain a little as a specimen liquor, if it will keep. A portion of that which I brought with me from Washington, and which was left at the bottom of a bottle, is undergoing decomposition, and I intend to see how far it retains the property of affecting the work of Digestion. Have you tried this experiment?

I am much gratified to learn that you are pleased with my work on Human Physiology. It has been pleasing to me to discover that many of your Experiments on Digestion are confirmatory of my positions, especially as opposite Doctrines prevail so much amongst those who have not reflected deeply on the matter.

My object in that work was to endeavor to sift truth from the large mass of "false facts" which we possess, and, if I have succeeded, I shall have attained the object of my Ambition.

Dr. Hays, the Editor of the *American Journal of Medical Science*, has requested me to say to you that if you determine to publish the results of your experiments in his Journal, he will place a number of copies in pamphlet form in your hands. I promised to mention the proposition to you, but I presume your facts will form a volume.

I shall be very anxious to see the results of your labors. I am now engaged in a work on the Influence of Physical Agents on Human Health, and I expect on the subject of Diet to obtain much useful information from your publication. It will afford me great pleasure to hear from you at all times.

Believe me, dear sir,

Very truly yours,

ROBLEY DUNGLISON.

After a six weeks' sojourn in New York city, Dr. Beaumont wrote the surgeon-general on April 16th:

I expect to leave the city to visit my family at the North in a few days, and probably before I can receive an answer to this. Will you, therefore, advise the communications on this and other subjects to be addressed to me at Plattsburgh, N. Y., till further advised? Dr. Russell will attend to my official duties during my absence. I shall endeavor to prosecute my experimental and physiological duties to better advantage for a few weeks there than is practicable to do here. I doubt not this measure will meet your approbation. . . .

I have been unable to do much at accurate experiments and observations since I came here, so numerous and increasing are the calls of the curious, the social, the scientific and the professional. Have not yet been able to complete the series I had on hand when I left Washington,⁶ but I am determined to do it soon, however, if I even have to shut myself up with Alexis in a convent, or retire to some seclusion in the country. My official duties are very light, and would not interfere at all with my experiments, could I avoid the vexatious social intercourse to which I am perpetually exposed in this City. It is an unfavorable place for the pursuit of physiological inquiries and experiments. . . .

The professional gentlemen of this City have quite too much personal, political and commercial business on hand to permit them to turn their attention to animal and physiological chemistry, whose high honours and rewards to them are to be the results. Their curiosity once gratified, they are silent and aloof from the subject.

Disappointed in his efforts to obtain any new light in New York city on the chemistry of the gastric juice, he endeavored to enlist

⁶The third series of experiments, conducted largely in Washington, was completed in New York city.

the coöperation of Professor Benjamin Silliman, of Yale University, and with this object in view made a special trip to New Haven. He had only recently returned from this visit, and promptly wrote the surgeon-general:

I have recently made a visit to New Haven, Conn., and submitted a phial of gastric juice to Prof. Silliman for tentative examination and analysis. He, with all the other Professors and Fellows of that institution, seemed to highly appreciate and earnestly expressed their conviction of the importance of the subject, and evince an earnest disposition to engage with much zeal and sincerity in promoting the investigation of the subject. Professor Silliman suggested the propriety and importance of sending a bottle of gastric juice to Professor Berzelius, of Stockholm, as "the man" (to use his own expression), "of all others, best qualified to investigate the subject of such deep interest to mankind," and very kindly offered to propose the subject, being in direct correspondence with him. Has given me a letter of introduction to the Swedish Consul at this place, and sent his communication to Professor Berzelius for me to forward with the juice and a concise statement of some of the most interesting circumstances of the case. I have about 12 collected, and when I have got 4 or 6 more of the pure gastric fluid, shall hand [it] over to the Consul, to be forwarded to the Swedish professor, with the expectation of receiving most important results from his investigation and analysis in the course of three or four months. Professor Silliman will in the meantime attend to the analysis of what he has, and give me the results of his labours.

Benjamin Silliman, the elder,⁷ held at this time the chair of chemistry and natural history at Yale University, and was a leading, if not the most prominent, chemist of his day in America. It was natural, therefore, that Beaumont should appeal to him for

⁷ Benjamin Silliman, Sr., son of General Gold Selleck Silliman, was born on August 8, 1779, in New Stratford Society, where his family had lately taken refuge on the alarm caused by the British raid along this coast. He was graduated at Yale College in 1796, and was tutor from 1799 to 1804. In the meantime he had read law with the Hon. Simeon Baldwin, of New Haven, and was admitted to the bar in 1802. His life work, however, was directed into entirely different channels by the establishment of a chair of chemistry and natural history at Yale. There being no eminent chemists in the country, the position was offered Silliman, with the understanding that he would be given time and opportunity to qualify himself for the position. Thorough in all things that he undertook, he became perhaps the most famous chemist and geologist of his day, delivering his first lecture at the age of 24. Within a short time he became so generally and favorably known as a lecturer that he received invitations from various cities throughout the United States. Through these lecture tours, which he now made almost annually, he did much to popularize science in America. He founded the *American Journal of Science*, afterward *Silliman's Journal*, in 1818, published an edition of "Bakewell's Geology" in 1829, and a two-volume text book on chemistry in 1830. He was well known abroad, and was in regular correspondence with some of the leading scientists of Europe, such as Berzelius, Humboldt, Carl Ritter, Murchison, and others. After half a century in Yale, he resigned at 74 years of age, and was followed by his son, Benjamin Silliman, Jr. He died in 1864 in his 86th year, interested in science and national affairs to the last. (Yale Portrait Catalogue, 1892; "Pioneers of Science in America," by Wm. Jay Youmans, 1896.)



Professor Benjamin Silliman, Sr. (From an original painting by Jocelyn, at Yale University.)

aid, though he knew full well that Silliman was in no sense a physiological chemist.

Soon after the visit to New Haven, Dr. Silliman, inclosing copies of two communications, one to Professor Jacob Berzelius and the other to Mr. Gahn, the Swedish consul, wrote:

You will be so good as to deliver the enclosed letters to Mr. Gahn at your convenience, having previously read my letter to Professor Berzelius, and noticed the obligations which I have taken the liberty to lay upon you.

I would recommend sending a pretty liberal supply of the fluid—if there

were even a pint, so much the better. Allow me to suggest that one of Lynch & Clark's pint Congress water bottles, carefully marked, sealed and capped with strong leather and twine, and then cased in tin, with the lid soldered on, that no one may open it, will afford all necessary security.

I will attempt, as soon as my engagements will allow, some tentative experiments on the gastric fluid which you left with me, and I shall hope to hear from you again on this interesting subject.

Silliman's letter to Berzelius was for the purpose of introducing Beaumont and presenting the subject matter under discussion.

YALE COLLEGE.

NEW HAVEN, U. S. A., April 10, 1833.

Prof. Jacob Berzelius.

Stockholm, Sweden.

DEAR SIR: I had the honor to write to you on the 5th day of December to thank you for the first five volumes of your chemistry, and I have now the pleasure to thank you for the sixth volume, which arrived some weeks since.

My more immediate object, however, is to invite your attention to a subject which I trust you will think to possess no common interest. It is nothing less than the gastric fluid, obtained in quantity and apparently in purity from a healthy man, who more than ten years ago, by the accidental discharge of a musket, obtained an artificial orifice to his stomach, which remains open and admits of the introduction of a tube of caoutchouc, by which early in the morning the gastric fluid is extracted. A sufficient quantity of it for analysis will, at my request, be transmitted to you by Dr. Beaumont, an eminent Surgeon of the American Army, who took charge of the wounded man, effected his cure, and has ever since kept him in his military family (for ten years), and has carefully observed the phenomenon of this extraordinary case. Dr. Beaumont, now resident at No. 110 Broadway, New York, will transmit to you a more particular statement of the case, and you may implicitly rely upon his statement. Only one fact need be mentioned to prove that the fluid obtained from this man's stomach is really the long-sought gastric fluid—namely, that when animal muscle, farinaceous matter and any articles of food whatever are immersed in it, it performs the process of digestion, while this fluid is, by itself, imputrescible and undergoes no change by keeping some months and perhaps longer. There are many very curious circumstances connected with this case, and the most important I trust Dr. Beaumont will communicate when he transmits the fluid through your worthy consul, Mr. Gahn, of New York.

My motive for troubling you with this affair is that I am anxious that a subject of such deep interest to mankind should be investigated by (pardon me for saying) the man, of all others, best qualified for the task. I should be very desirous that Dr. Beaumont or myself might receive the result as soon as convenient.

In the meantime I shall make a few tentative experiments, but I can not flatter myself that I shall discover the peculiar agent which works such wonders in the animal system.

Hoping that your health is good, and wishing you every blessing, I remain, dear sir,

Most respectfully and truly yours,

B. SILLIMAN.

The note to Mr. Gahn simply requested his kind offices in the prompt and careful delivery of the bottle of gastric juice to Professor Berzelius.

Dr. Beaumont forthwith collected a quantity of fluid, which he delivered to Mr. Gahn, together with a package of books and the following letter:

UNITED STATES OF AMERICA,
CITY OF NEW YORK, 17th April, 1833.

Prof. Jacob Berzelius,
Stockholm, Sweden.

SIR: I do myself the honor, at the suggestion of your worthy and scientific friend and correspondent, Prof. Silliman, of transmitting for your consideration the accompanying papers and a quantity of pure gastric juice taken from the Stomach of a man in perfect health and vigor, and doubt not the importance of the subject and the interest it may excite will be sufficient apology for thus obtruding upon your notice. Profr. Silliman's communication will suggest to you the general nature and importance of the subject.

From the accompanying number of the *Medical Recorder*, Page 14th and sequel, you may learn the origin and early history of the case, and in the following pages of this sheet I shall endeavor to give you a concise view of what has been seen and done by way of experiments and observation on the Gastric fluid and functions of Digestion. . . . [Describes the accident and the nature of the wound.]

The Gastric juice I sent you is also extracted this way through an appropriate caoutchouc tube; not in free and abundant quantities, but by slow distillations from the very minute papillæ of the surface of the villous membrane—requiring much time, patience and address to obtain it in small quantity. Not more than 1½ or 2 oz. can be extracted after fasting for any period, and even this quantity requires 25, 30, or more minutes for its extraction. Numerous experiments and observations have been made in this case within the last two or three years upon the process of digestion and the chymification of different kinds of aliments, both in the Stomach and out of it. The relative solubility in this Gastric fluid of many kinds of alimentary substances, both animal and vegetable, have been fairly tested, the comparative time and different facility of chymification ascertained, and the natural and varying temperature of the system determined by accurate observations of the Thermometer, placed in

the cavity of the Stomach, during abstinence and repletion. Various kinds of alimentary substances have been submitted to the action of this fluid, and it is found capable of completely dissolving them all, out of the stomach, when contained in a glass phial and placed upon a sand bath of the temperature of the Stomach—100° Fahr. Even solid bone, cartilage, tendon down to the softest textured aliments are completely chymified and dissolved when submitted to the Gastric juice in bottles and kept agitated in a temperature equal to the natural warmth of the stomach; varying, however, in rapidity and perfection in proportion to the healthfulness of the secretion, purity of the gastric fluid, and the solidity, quality and peculiar nature of the aliment. Thus artificial chymification of many kinds of food in this peculiar fluid has been fairly demonstrated—its powerfully solvent and antiseptic properties clearly ascertained and proven. But its accurate chemical analysis has not yet been accomplished, though several quantities have been submitted to some of the most eminent practical chemists of the United States. None have yet been able to obtain complete and satisfactory results.—Profr. Robley Dunglison, of the University of Virginia, is the only one who has fairly approximated or made returns of anything useful and important on this subject. Profr. Silliman has now, for the first time, a quantity under examination, from the investigation of which highly important results are anticipated.

For the 5 or 6 months last past I have been prosecuting a series of experiments and observations on the subject of Digestion by this Gastric fluid under the patronage of the Medical Departments of the Government, the results of which are now preparing, and will probably be published in the course of the ensuing autumn or winter, or so soon as an accurate and satisfactory analysis of this fluid, if it be practicable, can be obtained.

Should the subject be worthy of your notice, and the accompanying fluids and documents merit your attention, and you be so happy as to succeed in obtaining satisfactory analysis of it, I do most earnestly and respectfully desire and shall be greatly obliged to you to communicate the results of your investigations, soon as convenient, either to Profr. Silliman, at New Haven, Ct., or to me, in the City of New York, by doing which you will doubtless confer a signal benefit on the American Medical public, greatly promote the cause of science, and confer honor and enduring obligation upon

Your most respectful and obedient servant,

WM. BEAUMONT.

P. S. The man will continue with me. Should more of the fluid be required to complete the investigation and analysis, it will be rapidly transmitted upon the earliest indication from you. Any suggestion you may please to make will be happily recd. and attended to.

CHAPTER IX.

1833-1834.

Filled with great anticipations of the results of Berzelius' investigations, he now left for Plattsburgh with Alexis to visit his family for a few weeks, and at the same time to get away from the bustle of a large city, in order to arrange his data and prepare for the publication of his book. While in Plattsburgh he found that his cousin, Dr. Samuel Beaumont, was able to render him material assistance in his work, and he returned to New York much pleased with the results of his visit. In the meantime Alexis had left him and returned to Canada on account of the death of one of his children, with the promise, however, that he would come back to Plattsburgh in the near future. On Dr. Beaumont's return to New York he wrote to Dr. Lovell (June 1, 1833) :

I have a few days since returned from a visit to my family at Plattsburgh, where I have spent several weeks very pleasantly, and I believe advantageously as respects facilitating the publication of the experiments. I believe no detriment has occurred to the government nor dissatisfaction felt by the officers of the Dept. in consequence of my absence. I found much greater facilities afforded for writing out my notes and preparing the book for the press at Plattsburgh than in this city. . . .

My cousin, Dr. Samuel Beaumont, having formerly served a regular apprenticeship, and, for some time previous to taking up the study and practice of medicine, followed the business of printing and publishing, is well qualified, and afforded me great and important assistance, without which I should have labored under great embarrassment from my own ignorance of such business. We have arranged a plan nearly of the one you suggested, and have now a rough MS. written out, sufficient, with the experiments, to make about 300 printed pages, 8vo. This is to be corrected and copied for the type, and will require our united industry and application to execute it properly in three or four weeks. I find it an immense job to make a book, and I heartily wish it were done and publicly approved of and well sold, and I were snugly established at the Arsenal near St. Louis in regular performance of my official duties again.

In the same letter he suggested that, since his duties in New York were "little or nothing, excepting examining recruits," which could be performed by others as well, he would like to be transferred to Plattsburgh or Burlington to act as recruiting officer. Here his book could be published as well as at New York or Phila-

delphia, and he could at the same time have the assistance of his cousin, which would enable him to finish the work in three or four months. Dr. Lovell replied that the plan suited him admirably if General Scott raised no objections, and added:

Mr. Livingston,¹ who will soon go to Paris, and who has always taken a great interest in the experiments, is extremely desirous that you and Alexis should go there, and told me yesterday that he had no doubt of finding plenty of people there who would gladly pay all expenses, and that he would attend to it as soon as we authorized him to do so. I proposed to send your book to him as soon as published, on which they could make



Dr. Samuel Beaumont. (From an old wood cut. Courtesy of Mrs. George Fuller Tuttle.)

their propositions, if inclined to do so, so that I would make the necessary arrangements to have Alexis if you should go. Let me hear from you and know what arrangements you propose, in order to enable you to return to Plattsburgh. If there should be no objection on the part of General Scott, I should think the best way would be for you to go, as you did before.

Within a few days Beaumont informed Lovell that he had obtained General Scott's permission to make the suggested change, and wrote:

I applied in the latter part of May to Mr. Cooper for an extension of Alexis' furlough, but have not yet heard anything from him. Will you prompt him to let me know the result? If his furlough and enlistment can

¹Edward Livingston was about to leave for France to take up his duties as minister plenipotentiary.

be consistently continued, it will help to relieve me from the heavy expense I am constantly incurring on his account. His family being sick, and one of his children having died while we were in Plattsburgh, and he became very anxious to see them, I yielded to his solicitude and suffered him to go and take care of the surviving ones, and he staid longer than I expected; but has now come back again and is in Plattsburg with my family, where I hope soon to be again putting in and taking out those little bags of food, and to complete the last series of experiments. I shall engage him again for three or five years if he will agree, of which I expect there is no doubt. He always has been pleased with the idea of going to France. I feel most gratified at the expression of Mr. Livingston's desire that we should visit Paris, and shall duly consider the interest he takes in the subject, and make the best arrangements I can to meet your views and his. Will consult you again on the subject when further advanced. Shall send you a copy of the book as soon as completed. Hope you will give me your suggestions and advice freely; they will be received with gratitude and consideration. Have you any objections to my dedicating to you? Will you please to be frank on this subject?

Several weeks elapsed, but he heard nothing more concerning his request for transfer. The suggestion seemed agreeable to all concerned, but this was not sufficient—definite action was necessary on the part of the department. Alexis had returned to Plattsburgh in the meantime, and there were grave fears that he might become discontented. Therefore, on July 1st, Beaumont gave expression to his dissatisfaction in no unmistakable terms at being thus ignored by his superiors:

Disappointed and almost discouraged at not receiving orders to repair to Plattsburgh or Burlington to attend the recruiting service there, I shall leave on permission and go on suffrance tomorrow, expecting, of course, to receive orders to do that duty, as it will be unpleasurable to do it without. . . .

Alexis is at Plattsburgh with my family, and not entirely contented to remain, and fears are felt if I am not there soon that he will return to Canada and give me trouble and disappointment again. I hope you will excuse my importunities and anxiety. You know my views, and I have no doubt will rightly appreciate my feelings and wishes on the subjects suggested. I feel anxious to hear from you, officially and unofficially.

This promptly brought the department to a realization of their negligence in the matter, and within two or three days special order No. 101 was issued from the adjutant-general's office:

Surgeon Wm. Beaumont will repair without delay to Plattsburgh, and there report to the recruiting officer for duty.

This order was promptly followed by a personal note from the surgeon-general himself, explaining the delay in the matter.

On returning to Plattsburgh, Dr. Beaumont found Alexis awaiting him. His furlough of three months, given so that he might go to New York with Dr. Beaumont, had elapsed, and, in order to keep him on the government rolls, it was necessary to transfer him from the detachment of orderlies at Washington to some other duty. This was done on June 10th by a communication from General Macomb's office:

Sergeant Alexis St. Martin will hereafter be considered as on duty with you, and subject to your orders. He will consequently be dropped from the rolls of the detachment of orderlies, but will be mustered by you to the adjutant-general's office until further orders.

In recognition of Dr. Beaumont's admirable researches, the Columbian College of Washington, D. C., had conferred on him on March 6th of this year the honorary degree of Doctor of Medicine (*Doctorem in Arte Medici*). The institution requested, as a matter of form, that he present his credentials, and he sent them to Thomas Sewall, professor of anatomy and physiology, who, together with Dr. Lovell, had fathered the idea of conferring the degree. He wrote Professor Sewall:

I enclose you such testimonials as I have with me, and hope they are sufficiently creditable to my moral and Professional character to answer the occasion, with your personal knowledge of my object in view.

Though of the first respectability, their forms and the authorities from which they emanated may not be so high and classical an order as may be required by the laws of your institution, yet I respectfully request they may be candidly and favorably considered. The Resolution of the Michigan Medical Society refers to my first report of Alexis' case and the few experiments first published in the *Recorder*, a copy of which was communicated to that Society by request of some of its members while I was stationed at Mackinac. Will you have the goodness to preserve them in your own possession till I send for them after using them at discretion?

The degree was conferred by the Board of Curators and the faculty² on March 6th, but there was evidently some delay in delivering the diploma, for as late as June 1st Dr. Beaumont wrote to Dr. Lovell that it had not yet arrived. It came, however, in due

²The following are the names of the members of the Board of Curators and the faculty as they appeared on his diploma: Curatores—John P. Van Ness, C. K. Gardner, C. V. Towson, Enochus Reynolds, Rob. Johnstone, J. L. Skinner, Geo. Wood. Professores—Stephanus Chasim, Præses; Thos. Sewall, M. D., Anat. & Physiol.; Galeel Ruggles, Math. & Phil. Nat.; Thos. Henderson, M. D., Theor. & Prac.; N. W. Worthington, M. D., Mat. Med.; Fred. May, M. D., Obstets.; Thos. P. Jones, M. D., Chem.; J. C. Hall, M. D., Chirurg.

time, but he was remiss in acknowledging its receipt, for on July 24th Dr. Sewall wrote, inquiring about the progress of the experiments, and incidentally wishing to know if the diploma had been received. In reply to these queries, Dr. Beaumont wrote:

Yrs. of the 24 Inst. I have this day recd., and hasten to reply. I am indeed justly chargeable with an inexcusable remissness in not having before made acknowledgment of the honor conferred on me by the college through [your exertions]. I recd. the Diploma through Dr. L., with the Deposit left in his hands, and verily intended to have made prompt and grateful acknowledgment to the Institution from where it emanated, but diffidence, arising from a lively consciousness of deserving in so small a degree the honor conferred, deterred and disqualified me for expressing myself in terms adequate to truth and the occasion. Alike sensible of the [high] motives, the scientific views and the liberality of the College, and my own inability and demerits, my best exertions have been and all my desires concentrated to merit by constant assiduity and close attention to the subject the honor conferred. My best efforts have been continued in prosecuting the experiments and preparing them for publication since I have left Washington. . . .

Permit me respectfully to communicate through you my sentiments of high consideration and sincere thankfulness to the Professors and Gentlemen of the College for the respect shown me by the proceedings of that institution, and the assurance of my best efforts to make proper returns for the proffered honors.

The Connecticut Medical Society also took recognition of Beaumont's efforts at this time, and made him an honorary member of the organization. The following is a highly complimentary notice of his election:

NEW HAVEN, July 10, 1833.

Wm. Beaumont, M. D.

DEAR SIR: I herewith forward you the "Proceedings of President and Fellows of the Connt. Medical Society, in Convention, May, 1833," by which you will observe that you are elected an Honorary Member of the Connecticut Medical Society. In officially giving you notice of this election, I ought to state that the Connt. Med. Society has not been accustomed, like many other societies, to a lavish and indiscriminate distribution of its honors. This honor, it appears by referring to the records, has been conferred on only twenty-seven individuals since the year 1792. The aim has been to select candidates of distinguished merit, and in its present instance the society has acted with a consideration of the distinguished zeal, ability and success of your devotion to the improvement of medical science.

Most respectfully yr. obt. servt.,

CHAS. HOOKER.

Secy. Conn. Med. Secy.

After having prepared the manuscript of the former part of his work for the press, he conducted a fourth series of experiments from July 9th to November 1st, numbering 62 in all. These were devoted chiefly to the determination of the mean time of digestion of different articles of diet, naturally in the stomach and artificially in vials on the bath and in the axilla, recording some experiments in which the vials were carried in the latter manner from six to twenty-four hours. Nothing especially new was brought out in this series, they being largely confirmatory of those that had gone before.

Up to the very last experiment he lived in hopes that additional revelations concerning the chemistry of the gastric juice would be forthcoming from some of his correspondents on whom he was dependent for this portion of the work. He could delay no longer, however. The results of his work must soon be given to the profession and to the public, for there was already on file in the office of the clerk of the southern district of New York this record:

Be it Remembered, That on the Twenty-ninth day of July, Anno Domini 1833, William Beaumont, M. D., of the said District, hath deposited in this Office the title of a Book, . . . the title of which is in the words following, to wit: Experiments and Observations on the Gastric Juice and the Physiology of Digestion, by William Beaumont, M. D., Surgeon in the U. S. Army. . . .

He must have been greatly disappointed at this critical moment on the receipt of a communication from Mr. Gahn, informing him of a delay of two and one-half months in starting the package containing the gastric juice on its way to Berzelius, when he was laboring under the impression that it had already reached its destination. The following note of July 30th explains the reason for the delay:

. . . The Phial and Pamphlet could not be forwarded by a safe conveyance until one offered by the American Brig Marcella, Captain Hiler, of Boston, who sailed from New York June 27th direct for Gothenburg, where he promised to hand it to the superintendent or Chief Physician of the Quarantine establishment, with necessary directions for its being forwarded to Professor Berzelius at Stockholm. Mr. Gahn will take particular care and pleasure in transmitting the earliest advice to Dr. Beaumont.

Another communication received at this time from Professor Silliman was equally disappointing. It was as follows:

I have delayed replying to your letter of June 30 because I have been hoping ere this to go into the laboratory to attempt something with the Gastric juice. I can only say that hitherto I have found it impossible, owing to unceasing and inevitable demands on my time. I write now merely that you may know that I have not forgotten you. I do not see at present anything to hinder my doing something for you within a few days, . . . and in the meantime remember what I said to you last spring—that I have no great confidence in myself on this subject. The moment I hear from Professor Berzelius I will write to you, but I think we can not expect to hear from him within several months.

A few days later Professor Silliman sent Dr. Beaumont the result of his observations, as well as an abstract of a portion of a system of chemistry by Berzelius. I present this in full, because it gives one a splendid idea of the status of our knowledge of the physiology of digestion at that time.

YALE COLLEGE LABORATORY, August 2, 1833.

To Dr. William Beaumont,

Surgeon U. S. Army.

DEAR SIR: The following citations are from the seventh volume of a system of chemistry by Professor Berzelius which I have received within a few days. It is the French translation, published the present year, and is the latest authority upon the subject of The Gastric Juice. This was a long time regarded by chemists as a kind of universal solvent for different alimentary substances—afterwards they denied it any dissolving power.

Prout, Tiedeman and Gmelin give the best notions on this subject, and explain the contradictory statements of the other authors. At one time it was said to be very fluid, clear, entirely neutral; then alkaline, then acid, and that in a high degree.

Spallanzani, 1783, after many experiments declared the gastric juice, in a state of health, to be entirely neutral; a solvent for alimentary matter within and without the body; that it did not putrefy at the ordinary temperature of the air, but preserved animal matters from putrefaction and dissolved them with the aid of heat.

Carminati, 1785, found it not acid in carnivorous animals when fasting, but quite acid in those which had eaten. This, says Berzelius, is the first ray of light which illuminated the subject.

Werner, 1800, says the mass contained in the stomach of carnivorous and herbivorous animals is acid during digestion.

Montegre, 1812, who could vomit at will, and thereby obtained the gastric juice unmixed, says it is not acid or alkaline, not a solvent, not slow to putrefy; so much like saliva that he regards it as saliva swallowed, and the traces of free acid as owing to incipient decompositions.

Prout, 1824, says it is really acid; does not contain an organic acid, but free hydrochloric or muriatic acid. (For his process see Berzelius,

vol. VII, page 149.) This examination was made by taking the contents of the stomach of an animal killed soon after eating, and digesting the mass in water, filtering, and testing the fluid. His results were 39.6 parts chlorine found in a quantity—9.5 parts were combined with potassium and sodium, 7.9 with ammonium, 22.2 with hydrogen, constituting the hydrochloric acid. The acid liquid vomited by a dyspeptic gave 12.11 parts of chlorine under the saline form, 5.13 in the form of hydrochloric acid.

It was a desideratum to know the reason why the opinion that the gastric juice was neutral had been so obstinately maintained. Carminati's experiment was a guide, but those of Gmelin and Tiedeman furnished a complete solution of the enigma.

G. and T., without knowing the experiments of Prout, also established, in a different mode, the presence of free hydrochloric acid in this fluid. They discovered it was acid, and contained a deliquescent salt, not destroyed when heated to redness, and which proved to be chloride of calcium. General results—the stomach, when empty, secretes only sufficient fluid to moisten its internal face; mechanical stimulation produces a greater secretion, but never so much as the ingestion of alimentary substances.

The fluid of the empty stomach is slightly acid, sometimes neutral, and the acidity is in proportion to the quantity. Contains much mucus, which may be removed by the filter; is then clear, yellowish, and of a saline taste. Contains much water; deposits about 2 percent of solid residuum like that from the fluid of the serous membranes. The gastric juice becomes very acid when aliments have been swallowed; its free acid is chiefly hydrochloric acid. By distilling the liquid to dryness in a water bath, Gm. and T. obtained traces of acetic acid, and, in that of the horse, of butyric acid. The distilled liquid had a feeble reaction like acids; was not precipitated by nitrate of silver, as the hydrochloric acid was retained by the organic matters. Saturated with carb. of barytes and evaporated, it yielded an uncrystallizable salt, which, with sulphuric acid, gave out vapors exhaling the odors of acetic and butyric acids. The difficulty of obtaining the gastric juice pure and in large quantity, and of characterizing the substance separated by analysis, leaves the whole in much uncertainty.

Gm. and T. found no albumin in the gastric juice of the dog, and only traces of it in that of the horse. Salts in the gastric juice are principally chloride of sodium, chloride of potassium in small quantity, hydrochlorate of ammonia, a little sulphate of potassa. An alkaline carbonate or phosphate has never been found. After burning the residuum of the dried gastric juice, and taking up the soluble salts with the water, there remain lime, magnesia, traces of perox. of iron and sometimes protox of manganese, all combined with phosphoric acid, and a portion of lime with carbonic acid. Sometimes there are found sulphate of lime and chloride of sodium in the ashes. It is not improbable that the hydrofluoric acid, as well as hydrochloric acid, may exist in a free state in the

gastric juice, since the fluoride of calcium is found in bones and in urine.

The secretory organs of the gastric juice are not known, nor whether the same organs secrete the unacid fluid found in the empty stomach and the acid fluid is produced during the digestion. No organ for the especial secretion of the gastric juice has yet been discovered.

Then follow the results of his investigations, on which Dr. Beaumont had laid so much hope. It will be seen that his results are very unsatisfactory and incomplete, and added practically nothing to the knowledge which Beaumont had gleaned from his own observations and the suggestions of Dunglison.

EXAMINATION OF GASTRIC FLUID, AUGUST 2, 1833.

1. The fluid, after being kept in a closely corked vial more than three months, from April to August, and most of this time in a cellar, remained unaltered, except the formation of a pellicle upon the surface, slightly discolored by red spots; a second pellicle appeared after the precipitation of the first—it was thicker and more discolored, with dark-red spots like venous blood.

2. The fluid was cloudy, like a solution of gum Arabic, but on filtering it became perfectly clear and of a light straw-yellow tinge.

3. The pellicles, which had the appearance of inspissated mucus, after being separated from the fluid became, on exposure to the air, throughout of a dark, brownish red color, resembling the inner portion of a mass of coagulated blood. This change seemed to result from a sudden oxygenation.

4. The fluid exhaled a slight odor—not disagreeable, rather aromatic, and very similar to that which it at first exhaled, but not so strong; it was then rather disagreeable.

5. Taste feebly saline, not disagreeable.

6. Test papers of litmus, athanet, and purple cabbage were decidedly reddened. Turmeric paper underwent no change, but, when previously browned by an alkali (ammonia), the gastric fluid restored the yellow color.

7. Nitrate of silver gave a dense white precipitate, which, after standing five minutes in the sun's light, turned to a dark, brownish black, thus indicating muriatic acid. Mur. and Nit. barytes gave a slight opalescence, indicating a trace of sulphuric acid; not improbably there was also some phosphoric acid.

8. Specific gravity taken in a small thin glass tube containing 201 grs. of distilled water. When filled with the gastric fluid, its weight was increased 1 grm. of the gastric liquor—therefore 202. The specific gravity is therefore about 1.005, showing but little solid matter in solution.

It is quite obvious from the above statement that the gastric fluid now considered is identical with that heretofore examined by different

experimenters. It appears, however, to be more acid than the gastric fluid taken from a fasting stomach has generally been found, and I can not say how far it may have become acid by so long keeping. I trust we shall have a more full examination from Professor Berzelius, to whom (agreeably to my recommendation) you were so kind as to send an ample supply (one pint), which, from my own experience in keeping the fluid, we may hope will reach him without suffering any material change. Wishing to preserve a specimen for exhibition to my classes, I did not proceed to evaporate the small quantity ($2\frac{1}{2}$ ounces) of the fluid which I had left. At present we are in no condition to explain the surprising process of digestion. It is obvious that the trifling portion of chemical agents hitherto discovered in the gastric fluid (all of them mild, excepting a little free hydrochloric acid, and possibly, as Professor Berzelius suggests, a little hydrofluoric acid) can give no adequate explanation of this phenomenon, nor will it aid us materially to attribute the singular activity of the fluid to the peculiar action of the stomach, since digestion, with a temperature of about 100° F. and occasional agitation, takes place as rapidly out of the body as in the living stomach. On placing today a piece of veal in a wine glass containing some of the gastric fluid, and standing on a warm stove (stirring occasionally with a glass rod), digestion began very soon and proceeded until the fluid had spent its force, and was renewed on the addition of more fluid.

I regret that I can not contribute something important to our previous knowledge—there is much in physiology that eludes the scrutiny of chemistry. Thought may emanate from the brain, volition may cause the movement of the muscles, sentient and ever rational beings may spring from a seminal drop of very simple composition, and all kinds of ailment may dissolve with the equally mild and simple gastric fluid, but who can explain the proximate, or even the ultimate, cause in any other way than by referring it to a positive law of the Creator—often incomprehensible equally in his nature and in his works.

Yours very respectfully,

B. SILLIMAN.

Private.—I am sorry to have done so little for you, but at present it is utterly impossible for me to do more—such are my engagements in many ways. It would be very desirable that the actual publication of your work should be kept back until we can hear from Berzelius, who, with such an unprecedented quantity, will, I am persuaded, do something worth telling of.

Not satisfied to go to press before every possible source of knowledge had been exhausted, Dr. Beaumont makes one more appeal to Professor Dunglison:

I feel some delicacy in addressing you at this time, lest I may be considered unwarranted. The lively interest manifested by you in the successful prosecution of my experiments last winter induces me to be-

PROPOSALS

FOR PUBLISHED BY SUBSCRIPTION, A NEW WORK, TO BE ENTITLED

OBSERVATIONS AND EXPERIMENTS

ON THE

GASTRIC JUICE,

AND THE

PHYSIOLOGY OF DIGESTION.

BY WILLIAM BEAUMONT, M. D.

Surgeon in the U. S. Army.

THE great subject of digestion, a correct knowledge of which must materially conduce to the health and happiness of all, is one which cannot fail to commend itself to the understanding and interests of physiologists, physicians, men of science, and the whole community. These experiments and observations, the author believes, comprise a body of facts, in relation to this subject, which are of vital importance, and are submitted to the public with a confident hope that they will essentially subserve the cause of science and medicine, and ultimately become the means of ameliorating the condition of suffering humanity.

The opportunity for making the experiments was afforded in the following way. Alexis St. Martin, a Canadian, who became the subject of them, in the year 1822, was accidentally wounded in the side, at Michilimackinac, where the author was then stationed. It is unnecessary here to enter into a particular description of the wound, or the process of the cure. These are detailed in the introduction of the work. It is sufficient to say that he finally recovered from the wound with an aperture in his side leading directly into the stomach; this having been lacerated at the time of the accident, and its torn edges having adhered to the muscles and integuments at and the circumference of the external wound. The orifice is nearly an inch in diameter, through which the interior of the stomach can be examined at all times. Food and drinks, after having been swallowed can be easily extracted from the stomach, and aliment may be introduced into it through the aperture.

Gastric juice within the stomach, by suspending it, confined in small wooden bags, or loosely on cords, through the aperture, into that organ, with the same satisfactory results. Various experiments, amounting to about two hundred, have been made, all of which are highly interesting and important. Alimont has been taken out of the stomach, through the same aperture, from ten minutes to three or four hours after having been eaten, and has been thus examined during the different stages of digestion, and the progress of chymification minutely ascertained and noticed.

It will be impossible to enter into a detail of all the subjects connected with the experiments, in the short limits of a prospectus. The work will probably contain near three hundred pages, octavo. Besides the experiments, and the remarks appended to them, which will perhaps occupy two thirds of the book, it will be preceded by an introduction, giving a history of the cases which afforded the opportunity for making the experiments; and a physiological essay on the subjects connected with digestion, under the following heads:—1st, Of Aliment.—2d, Of Hunger and Thirst.—3d, Of Satisfaction and Satety.—4th, Of Mastication, Insalivation and Deglutition.—5th, Of Digestion by the Gastric Juice.—6th, Of the Appearance of the Viscous Coat, and of the Motions of the Stomach.—and 7th Of Chymification, and Uses of the Bile and Pancreatic Juice. The object of this essay will be to elucidate the author's observations on the subjects which have been treated in the same

lieve that a few suggestions on the subject may not be unkindly considered at this time. Being about to commence the publication of all my experiments, observations, etc., I am anxious to render them as interesting as possible to the public. To do this, I wish to [include] essential and important facts which may have been developed in the course of the investigation, whether my own or the more important labors of scientific friends, so far as they may feel willing to contribute and consent to be associated with me.

The result of your analysis of the qty. of gas. ju. taken with you from Wn. is considered of much importance, to be inserted as it is. Should you have obtained any fuller and further satisfactory results from an investigation of the second parcel sent you, and will take the trouble to communicate them to me at this place soon as convenient, with your permission to incorporate them with the work, it will doubtless greatly enhance its value, and confer upon science a very important benefit. . . .

May I not anticipate your continued favorable consideration of the subject, and expect your early reply to this? I have been too laboriously occupied to be either a faithful or interesting correspondent. I hope soon to atone for any weakness I may have been thought chargeable with. . . .

At this time Major Bache, of Philadelphia, was at Plattsburgh, and Dr. Beaumont took advantage of the opportunity to send a specimen of the gastric contents to his brother, Dr. Franklin Bache,³ with the following note:

. . . I avail myself of an opportunity of sending some gastric juice by your brother, Major Bache, and you will do me a favor if you will analyse it as soon as practicable and send me the result. I am about publishing a volume of experiments and observations, and will be glad to get your analysis before it goes to press, which will be in the course of three or four weeks. By giving your immediate attention to this subject, you will greatly oblige me and confer a benefit on the cause of science.

Dr. Bache replied (September 12, 1833):

. . . I have not the requisite convenience and apparatus to make an analysis of the juice, as you request, but I hope to be able to find time to test it, so as to determine its principle, if not all its constituents, without ascertaining the relative proportion. Animal analysis is the most difficult department of [chemistry], and there are not living now many chemists who could perform a complete analysis of the gastric juice of Alexis. Thenaud in France, Prout in England, Berzelius in Sweden are the best

³Dr. Franklin Bache, an American chemist, born in Philadelphia in 1792, was professor of chemistry in the Philadelphia College of Pharmacy in 1831 and in the Jefferson Medical College in 1841. As early as 1819 he had published a system of chemistry. He was the grandson of Sarah Franklin Bache, the only daughter of Benjamin Franklin, and his father was Benjamin Franklin Bache, the "Benny" of Franklin's letters from France.

analysts we have in this department, and I advise you to send specimens of the juice to them.

A few days ago I received a letter from Dr. Lovell, enclosing a prospectus of your work, requesting that I would place it in some book store. Accordingly I have placed it at the store of Mr. Judah Dobson, who has kindly agreed to receive the subscribers, and to perform any agency in the matter that may be agreeable to you. I presume you do not intend to print your work in Plattsburgh, as I am sure that it cannot be done there in that handsome style which is so essential to its success. Wishing you every success in your laudable exertions in elucidating a very important department of Physiological science, I subscribe myself. . . .

It was decided to sell the book by subscription, and, with this in view, prospectuses, or "proposals" (page 184), were sent out about September 1st, presenting a synopsis of the work, at the bottom of which was space for the signatures and addresses of those subscribing to the work. These prospectuses were sent out to various friends throughout the country, some of whom personally conducted a campaign in behalf of Dr. Beaumont, others of whom deposited the prospectuses in conspicuous places, such as a drug store or book store. Among the names of those who acted as agents may be mentioned Dr. Chandler, his preceptor, St. Albans, Vt.; John Beaumont, his brother, Lebanon, Conn.; Lieutenant J. W. Kingsbury, a lifelong friend, St. Louis, Mo.; Dr. Franklin Bache, Philadelphia, Pa.; Mr. Ramsay Crooks, New York city; Hezekiah Howe, New Haven, Conn.; Dr. L. Abot, Detroit, Mich.; Colonel Stearns, Malone, N. Y.; Judge Loomis, Montpelier, Vt.; A. C. Flagg, Albany, N. Y.; E. L. Clark's bookstore, St. Louis, Mo.; the store of Judah Dobson, Philadelphia, and many others.

After receiving several of the "proposals," Dr. Lovell wrote Dr. Beaumont on September 13th:

Your letter of the 1st inst. has been received, and I congratulate you on the prospect of finishing your book. One copy of the proposals has been sent to Dr. Franklin Bache, at Philadelphia, one to Dr. Stewart, at Baltimore, who will, I believe, give them the best direction for subscriptions whenever requested to make the result known. The two others have been retained for this place. With regard to the Paris journals, it has occurred to me that the best plan will be to transmit a copy or two of your book to Mr. Livingston through the State Department, and at the same time to suggest the plan to him for the consideration of some of their learned ones, who would then be able to form some definite opinion of the importance of the case, and be more likely to make some determinate and practical proposition, which could perhaps hardly be expected in a mere

statement of the case. Such a letter with the books may be transmitted to Mr. L. as soon as the latter are ready. On the mode of obtaining copyrights in Europe I know nothing, but believe it to be troublesome and expensive, unless perhaps it is done through some of the bookseller's craft. . . . Although the facts on the third page of your book are somewhat apochryphal,⁴ the kind feelings which invented them are not the less appreciated by, sincerely yours. . . .

When Mr. Ramsay Crooks⁵ received his copy of the proposal, he replied with some excellent advice from the standpoint of the business man :

I wrote you a week ago, and by the date of this you will conclude that Sunday is not always appropriated by me to public worship.

Some medical gentlemen to whom I have spoken of your forthcoming publication, and exhibited your "proposals," encourage me to hope a respectable list of subscribers can be obtained, but they suggest that had you procured and appended to the prospectus the testimonials of some of your distinguished professional brethren as to the facts and merits of the work, it would have done you much good. If not too late, it may be well to do so yet.

I have concluded to employ a competent man to visit the principal physicians here, and subsequently those of less note. The difficulty is to get the right sort of person, but I have hopes of finding my man in a day or two.

Having no knowledge of bookmaking or bookselling, I am a poor advisor, but with your permission I think the surest road to success is to get your book out as soon as possible, and send it to such of our reviewers as will by their respectability stamp its full value upon the work, and bring it into notice at once; and I would place it in the hands of an able bookseller in each of the principal cities and towns of the Union. I am told that subscription lists do not always show the real amount of patronage, for more than one is quite willing to see his name in the company of his betters, but not so ready to pay when the collector calls.

Newspapers throughout the country were very generous and very complimentary in their reviews of Dr. Beaumont's book. The comments of the lay press in this connection are both interesting

⁴This allusion is to the dedication of the work: "To Joseph Lovell, M. D., Surgeon-General of the United States Army, whose merit justly entitles him to the rank which he holds, and whose zeal in the cause of medical science is equalled only by his ability to promote it. As a tribute of respect for his public and private virtues, and as a feeble acknowledgment for a long tried and unvarying friendship, this work is respectfully dedicated, by The Author."

⁵Mr. Crooks remained a partner in the American Fur Company practically up to the time of Mr. Astor's retirement from business, and in 1834 the charter of the company was transferred to Mr. Crooks and his associates. He was made president of the concern, with New York as his headquarters, but reverses in business necessitated an assignment in 1842, following which Mr. Crooks started a fur business for himself. He was very successful up to the time of his death in New York city, which occurred on June 6, 1859, in his seventy-third year.

and amusing. A few of the clippings that had been carefully preserved by Dr. Beaumont are reproduced in part here to give a general idea of the attitude of the press and the public toward this unique work.

Evening Post, New York, September 5, 1833:

It will be concluded readily by most men that one of the most important subjects for the study of man is his stomach. In sickness or in health, it equally claims our serious attention, and the epicure and the dyspeptic are alike engaged, though by very dissimilar modes, in answering the calls or soothing the complaints of this very essential part of the body. We all remember the ingenious apologue on this subject wherein it is shown how the rebellious members were punished for daring to despise and presuming to refuse allegiance to this craving and insatiable monarch. But with all the study that has been bestowed upon this all-important organ and the mysterious powers of digestion, we have been very much in the dark in respect to the causes of its healthful operations or of its morbid actions. Doctors have differed and patients have suffered, while their physicians disputed the reality of the gastric juice, or the effect of this or that substance introduced as food or medicine into the mysterious region from which all power flows. It seemed as if nothing short of miracle could have enabled man to view the internal operations and test the power of the juices provided by nature to carry on the animal economy; and yet it has been done, and the previous knowledge has been revealed without the aid of miracle, although by a process little short of one. . . .

Repository, St. Albans, Vt., September 19, 1833:

The march of knowledge is onward, its progress unceasing, its extent apparently boundless. Not a year rolls into eternity but leaves its memorial of discoveries of improvements. That which one year is "dark as midnight" is before the close of another unveiled, its hidden mysteries exposed, its properties shown and subjected to the use and benefit of mankind. All things seem to conduce to this advancement. Even pain and anguish further it. Whatever transpires adds to the already mighty mass of science. Genius stands ready to catch from passing events a mite to add to the stores of learning, and philanthropy is ever on the watch to extract therefrom wherewithal to ameliorate man's condition. Each is successful; every year witnesses new developments; each season brings with it an antidote, in a degree, to some of the "many ills that life is heir to." . . . The work is one of general utility, is calculated for general circulation, appeals to and should receive the support of every class of readers, and can not fail to deeply interest and instruct all who give it a perusal. It offers to the physician much minute instruction in his profession that can nowhere else be found; to the philosopher a new source of admiration and reflection on the complicated, yet beautiful, per-

fectness of the human body; to the chemist the examination of a liquid more potent than any in his laboratory; and to every man a greater knowledge of his internal construction and a fund of extremely interesting information, which in these days of indigestion is well worth one's notice to acquire, and thereby guard against the demon. The book will be published in December next, illustrated with engravings, and afforded to subscribers at three dollars.

St. Louis, September 19, 1833:

The Wonders of Nature.—Wonderful are the doings of nature! Strange and erratic is her course, setting at defiance the wisdom of man, baffling his deepest and most elaborate observation, as it were to show his impotence; and then suddenly, singularly and bounteously throwing open her inmost recesses to his view and for his benefit, placing at his disposal by accident what she denies to his most extended and most minute researches. Yes! avenues to acknowledge the most important are often opened by the merest accidents. An exemplification of this is seen in the case on which is founded the experiments on the gastric juice, etc., recently published by Dr. Beaumont. . . .

The author undoubtedly relied on the interest of the subject, the unexampled source and nature of his information, to secure for it the patronage of the community. Has he calculated wrongly? Is he to be made an example to deter others from pursuing the thankless path of costly research after truth? Or, is it his to show that an American public will ever cordially nourish the seeds for improvement which may come into their possession?

The price of the book, though high, compared with the light reading of the day, is not so when considered as to its intrinsic value. And even at the price at which it sells it will not probably remunerate the author for the expenses attendant on prosecuting the experiments, etc. I hope our citizens will give it a liberal patronage. O. P. Q.

National Gazette:

Beaumont's Experiments on Digestion.—The all-absorbing topic of the deposits of public money appears, from the silence of this long expected production of Dr. Beaumont, to have left no leisure in our reading community for an inquiry into its merits. As it, however, treats of a description of deposits in which each one must take the "responsibility on himself," even if our good president^o should claim his right as chief executive officer to assume that duty also—which, by the way, would not startle a physiologist more than the shade of Washington must be by the novel assumption of power by his successor—a short notice of it may be useful.

^oHas reference to Andrew Jackson's financial policy, and his arbitrary and vigorous opposition to the Bank of the United States, when he vetoed the bill to recharter the institution and ordered the accumulated funds distributed among the state banks.

Republican, St. Louis, September 24, 1833:

. . . Proposals for this work can be seen at E. L. Clark's book store, where not only the medical gentlemen are invited to patronize merit and obtain information, but the community at large, who in these times of cholera can not have a better medical work in their hands than the "Physiology of Digestion."

Galenian, September 15, 1833:

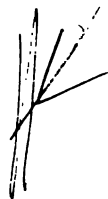
. . . Will be read with utility and interest by all classes of every community. . . . It develops important facts relative to the digestive functions, concerning which no person of either sex should remain ignorant.

Following each of these introductions was a long synopsis, in many cases a column or more being devoted to the review.

Everything looked bright and encouraging for the reception of the book. More than eleven years had elapsed since the occurrence of the accident which brought Beaumont the opportunity which he had recognized and utilized to its fullest extent. He was, however, still dissatisfied with the results of his labors—discontented because it was incomplete, and restless because he realized that this source of physiological information had not yet yielded up to science all the riches that lay buried in it. More digging, more research, would be necessary to exhaust the rich vein of possibilities. He entered, therefore, into a new agreement with Alexis, the wording of which was practically the same as in the previous one, which had expired in October. This time it was executed, however, for a period of two years, beginning November 7, 1833, for a consideration of \$400, to be paid in installments (page 192).

There being no longer occasion for his remaining in Plattsburgh, Dr. Beaumont requested and received orders, dated November 23d, to repair to Washington and report himself to the surgeon-general. Two weeks later he informed the adjutant-general that he had just received the order, and it would be promptly obeyed.

Just about this time the first copies of his book were being turned out. One of them was deposited on December 20th in the office of the clerk of the Southern District of New York, and others were sent complimentary to many of his notable friends in Washington. While I have no intention of presenting here a full synopsis or review of the work, for this would naturally lead to a discussion of the large field of the physiology of digestion, it will not be amiss



*in witness whereof as well the said William Beaumont
 as the said Alexis St. Martin have hereunto set their respective
 hands & seals the day and year first herein written in the
 presence of each other & of the subscribing witnesses hereof
 and in the presence of*

L. Beaumont { *Alexis St. Martin*
J. Douglas Woodward {
John B. Cook { *Wm Beaumont*

United States of America
 State of New York
 Clinton County ss. I the undersigned a Notary Public in and for
 said State duly Commissioned and sworn and authorized in all respects
 to act as such a Notary Public do hereby certify and attest that the
 William Beaumont and Alexis St. Martin who are both person-
 ally known to me executed, signed, sealed and delivered the
 above instrument in writing in my presence and in the presence
 of each other, & in the presence of the above named subscribing
 witnesses who also subscribed their names as witnesses to the
 due execution of said instrument in my presence & in the presence
 of each other and also in the presence of both of said parties.
 In witness & testimony whereof & for the due authenti-
 cation whereof I have hereunto signed my name, and
 affixed my Seal of Office as Notary Public at Blackburgh
 aforesaid this second day of November in the year of our
 Lord one thousand Eight hundred & thirty three.
J. Douglas Woodward
 Notary Public

The last page of a contract made on November 7, 1833, between Dr. Beaumont and St. Martin for a similar purpose as the contract shown on page 148.

to speak briefly of the book, and present a few characteristic abstracts from it, especially since the original may not be accessible to every reader of this volume. The book is an octavo of 280 pages, bound in pasteboard, printed on thin paper, and is entitled "Experiments and Observations on the Gastric Juice and the Physiology of Digestion," by William Beaumont, M. D., Surgeon U. S. A., and printed by F. P. Allen,⁷ Plattsburgh, 1833. The sale of the first edition was placed in the hands of Lilly, Wait & Co., of Boston. The preface is short, pithy, and characteristic of the work in general:

The present age is prolific of works on physiology; therefore, in offering to the public another book relative to an important branch of this science, it will perhaps be necessary to assign my motives.

They are, first, a wish to comply with the repeated and urgent solicitations of many medical men who have become partially acquainted with the facts and observations it is my intention to detail; men in whose judgment I place confidence, and who have expressed their conviction of the deep importance of the experiments, the result of which I mean herewith to submit to the public. Secondly (and it is that which mainly influences me), my own firm conviction that medical science will be forwarded by the publication.

I am fully aware of the importance of the subject which these experiments are intended to illustrate, as well in a pathological as in a physiological point of view; and I am therefore willing to risk the censure or neglect of critics if I may be permitted to cast my mite into the treasury of knowledge, and to be the means, either directly or indirectly, of subserving the cause of truth and ameliorating the condition of suffering humanity.

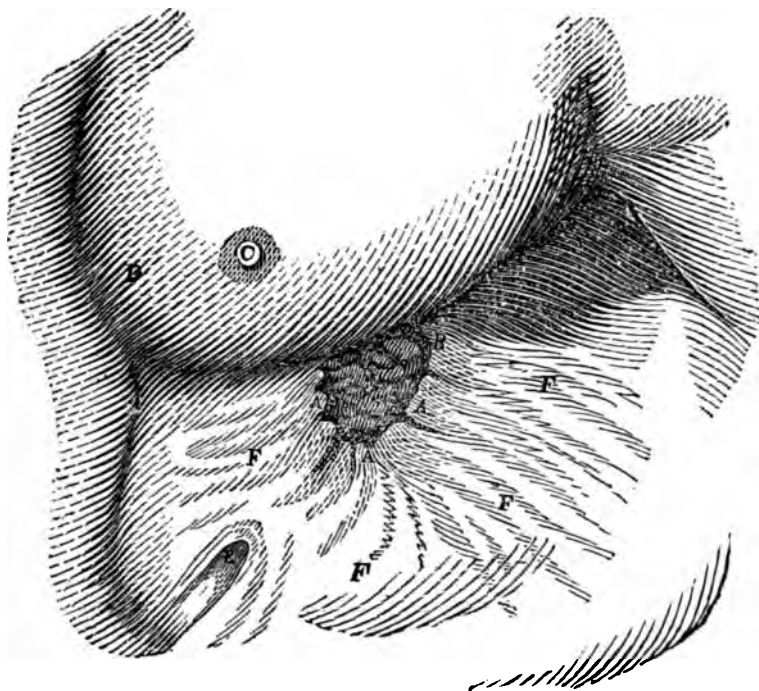
I make no claim to originality in my opinions as it respects the existence and operation of the gastric juice. My experiments confirm the doctrines (with some modifications) taught by Spallanzani and many of the most enlightened physiological writers. They are experiments made in the true spirit of inquiry, suggested by the very extraordinary case which gave me an opportunity of making them. I had no particular hypothesis to support, and I have therefore honestly recorded the result of each experiment exactly as it occurred.

The reader will perceive some slight seeming discrepancies which he may find it difficult to reconcile, but he will recollect that the human ma-

⁷ Frederick P. Allen was a mere boy when Colonel Melancthon Smith, in April, 1811, purchased an old Ramage press, with two or three barrels of type, and established the *Plattsburgh Republican* in opposition to Samuel Lowell's anti-Federalist organ. A room was hired in the home of Allen's mother, and it was here the first editions were printed. At 13 years of age he became an apprentice as typesetter, and afterward served as compositor under Azariah C. Flagg's editorship. At the time of the publication of Dr. Beaumont's book in 1833, Allen was the proprietor and editor of the *Northern Intelligencer*, which afterward became the *Northern Sentinel*. The book was, therefore, published in this office.

chine is endowed with a vitality which modifies its movements in different states of the system, and probably produces some diversity of effects from the same causes.

I had opportunities for the examination of the interior of the stomach and its secretions which have never before been so fully offered to any one. This most important organ, its secretions and its operations, have been submitted to my observation in a very extraordinary manner, in a state of perfect health, and for years in succession. I have availed my-



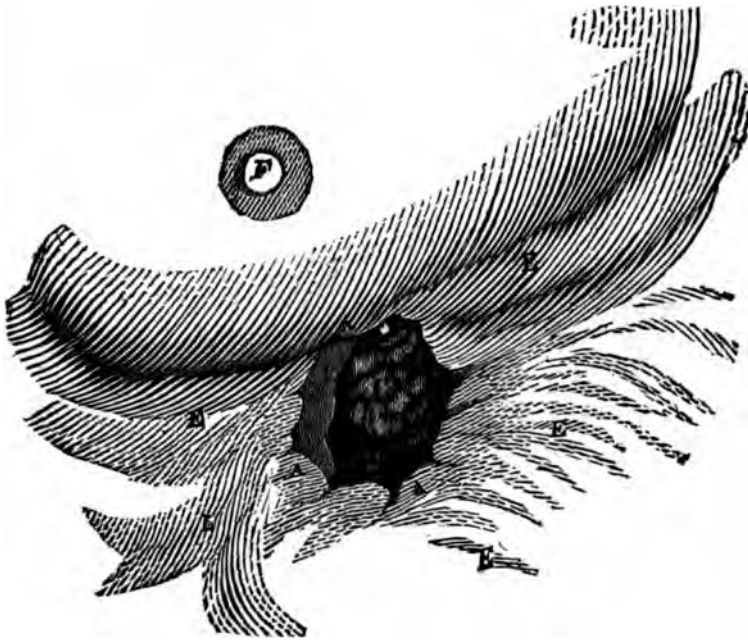
"This engraving represents the ordinary appearance of the left breast and side, the aperture filled with the valve; the subject in an erect position." (From a wood cut in the original edition of "Beaumont's Experiments," 1833.)

self of the opportunity afforded by a concurrence of circumstances which probably can never again occur, with a zeal and perseverance proceeding from motives which my conscience approves, and I now submit the result of my experiments to an enlightened public, who, I doubt not, will duly appreciate the truths discovered and the confirmation of opinions which before rested on conjecture.

I submit a body of facts which can not be invalidated. My opinions may be doubted, denied, or approved, according as they conflict or agree with the opinions of each individual who may read them, but their worth

will be best determined by the foundation on which they rest—the incontrovertible facts. . . .

In the introduction he describes the occurrence of the accident, the treatment of the wound, and gives a recital of the trials and tribulations experienced in his efforts to keep St. Martin under observation. Then follow three half-page cuts, representing (1) the position of the aperture into the stomach under the left breast, “the aperture filled with the valve;” (2) the appearance of the



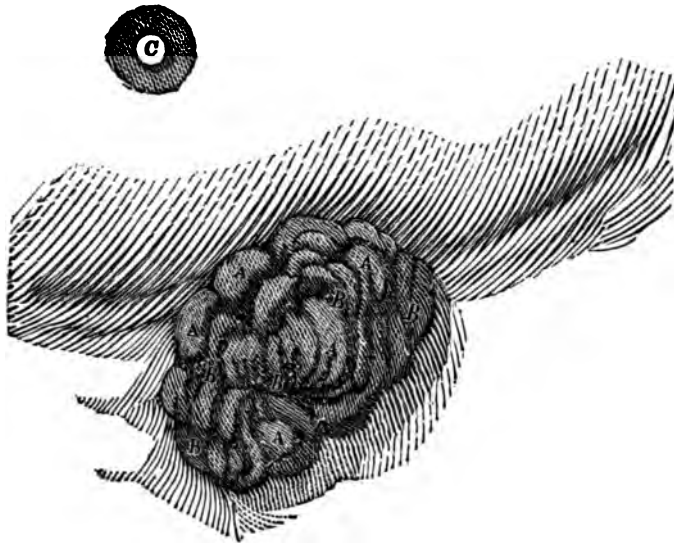
“This engraving represents the appearance of the aperture with the valve depressed.” (From a wood cut in the original edition of “Beaumont’s Experiments,” 1833.)

aperture, with the valve depressed; (3) the portion of the stomach prolapsed through the aperture, with the inner surface everted. The cuts are very crude, and convey very little to the mind of the beholder. Under the caption of “Preliminary Observations” he states:

I consider myself but an humble enquirer after truth—a simple experimenter. And if I have been led to conclusions opposite to the opinions of many who have been considered the great luminaries of physiology,

and, in some instances, from all the professors of this science, I hope the claim of sincerity will be conceded to me when I say that such difference of opinion has been forced upon me by the convictions of experiment and the fair deductions of reasoning.

Following this, about a hundred pages are devoted to his deductions, based on his observations, and to various opinions on the subject of digestion in general, and, in order to elucidate these opinions, he arranges his discussion into the following heads or sections :



"This engraving represents a portion of the stomach prolapsed through the aperture, with the inner surface inverted and spread out over the integuments of the side." (From a wood cut in the original edition of "Beaumont's Experiments," 1833.)

Section 1—Of Aliment; Section 2—Of Hunger and Thirst; Section 3—Of Satisfaction and Satiety; Section 4—Of Mastication, Insalivation, and Deglutition; Section 5—Of Digestion by the Gastric Juice; Section 6—Of the Appearance of the Villous Coat, and of the Motions of the Stomach; Section 7—Of Chylification and Uses of the Bile and Pancreatic Juice.

A careful perusal of these "sections" in the original work is well worth while, and is recommended to all to whom the work is accessible. Sections 5 and 6 are of unusual interest in that they contain the first careful descriptions of the appearance of the interior

of the human stomach, the characteristics of the gastric juice, and more especially the peristalsis of the stomach, which is here so vividly described that we have been able to add but little, even with the aid of the x-ray. It will not be amiss to give a few extracts from these sections.

The inner coat of the stomach, in its natural and healthful state, is of a light or pale pink colour, varying in its hues according to its full or empty state. It is of a soft or velvet-like appearance, and is constantly covered with a very thin, transparent, viscid mucus, lining the whole interior of the organ.

Immediately beneath the mucus coat, and apparently incorporated with the villous membrane, appear small, spheroidal, or oval shaped, glandular bodies, from which the mucous fluid appears to be secreted. . . . On viewing the interior of the stomach, the peculiar formation of the inner coats are distinctly exhibited. When empty, the rugæ appear irregularly folded upon each other, almost in a quiescent state, of a pale pink colour, with the surface merely lubricated with mucus. On the application of aliment, the action of the vessels is increased, the colour brightens, and the vermicular motions excited. The small gastric papillæ begin to discharge a clear, transparent fluid (the alimentary solvent), which continues abundantly to accumulate as aliment is received for digestion. . . .

Pure gastric juice, when taken directly out of the stomach of a healthy adult, unmixed with any other fluid, save a portion of the mucus of the stomach with which it is most commonly and perhaps always combined, is a clear, transparent fluid, inodorous, a little saltish, and very preceptibly acid. Its taste, when applied to the tongue, is similar to thin mucilaginous water slightly acidulated with muriatic acid. It is readily diffusible in water, wine or spirits, slightly effervesces with alkalis, and is an effectual solvent of the *materia alimentaria*. It possesses the property of coagulating albumen in an eminent degree, is powerfully antiseptic, checking the putrefaction of meat, and effectually restorative of healthy action when applied to old, foetid sores and foul, ulcerating surfaces. . . .

The gastric juice does not accumulate in the cavity of the stomach until alimentary matter be received and excite its vessels to discharge their contents for the immediate purpose of digestion. It then begins to exude from its proper vessels, and increases in proportion to the quantity of aliment naturally required and received. A definite proportion of aliment, only, can be perfectly digested in a given quantity of fluid. . . .

The human stomach is furnished with muscular fasciculi, so arranged as to shorten its diameter in every direction. By the alternate contraction and relaxation of these bands a great variety of motion is induced on this organ, sometimes transversely and at other times longitudinally. These alternate contractions and relaxations, when affecting the transverse diameter, produce what are called vermicular or peristaltic motions. The effect of the contraction of the longitudinal fibres is to approximate the splenic and pyloric extremities. When they all act together, the ef-

fect is to lessen the cavity of the stomach, and to press upon the contained aliment, if there be any in the stomach. These motions not only produce a constant disturbance or churning of the contents of this organ, but they compel them at the same time to revolve around the interior, from point to point and from one extremity to the other. In addition to these motions, there is a constant agitation of the stomach produced by the respiratory muscles. . . .

The ordinary course and direction of the revolutions of the food are, first, after passing the œsophageal ring, from right to left, along the small arch; thence through the large curvature, from left to right. The bolus, as it enters the cardia, turns to the left, passes the aperture, descends into the splenic extremity, and follows the great curvature towards the pyloric end. It then returns in the course of the smaller curvature, makes its appearance again at the aperture in its descent into the greater curvature, to perform similar revolutions. . . .

It is probable that from the very commencement of chymification—from the time the food is received into the stomach until that organ becomes empty—portions of chyme are constantly passing into the duodenum through the pyloric orifice as the mass is presented at each successive revolution. . . . The passage of chyme from the stomach is gradual. Portions of chyme, as they become formed, pass out and are succeeded by other portions. In the early stages the passage of the chyme into the duodenum is more slowly effected than in the later stages. At first it is more mixed with the undigested portions of aliment, and is probably separated with considerable difficulty by the powers of the stomach. In the later stages, as the whole mass becomes more chymified and fitted for the translation, the process is more rapid, and is accelerated by a peculiar contraction of the stomach, a description of which will be found in the next section. It appears to be a provision of nature that the chyme, towards the latter stages of its formation, should become more stimulating, and operate on the pyloric extremity of the stomach, so as to produce this peculiar contraction. . . . After the expulsion of the last particles of chyme, the stomach becomes quiescent, and no more juice is secreted until a fresh supply of food is presented for its action, or some other mechanical irritation is applied to its internal coat. . . .

Water and alcohol are not affected by the gastric juice. Fluids of all kinds are subject to the same exemption unless they hold in solution or suspension some animal or vegetable aliment. Fluids pass from the stomach very soon after they are received, either by absorption or through the pylorus. . . .

I think I am warranted, from the result of all the experiments, in saying that the gastric juice, so far from being "inert as water," as some authors assert, is the most general solvent in nature of alimentary matter—even the hardest bone cannot withstand its action. . . .

With respect to the agent of chymification—that principle of life which converts the crude aliment into chyme, and renders it fit for the action of the hepatic and pancreatic fluids, and final assimilation and conversion

into fluids and the various tissues of the animal organism—no part of physiology has perhaps so much engaged the attention of mankind and exercised the ingenuity of physiologists. It has been a fruitful source of theoretical speculation from the father of medicine down to the present age. It would be a waste of time to attempt to refute the doctrines of the older writers on this subject. Suffice it to say that the theories of Concoction, Putrefaction, Trituration, Fermentation and Maceration have been prostrated in the dust before the lights of science and the deductions of experiments. . . .

His results reveal not only the great pains with which he had worked, the remarkable care with which he interpreted his findings, but a thorough knowledge as well of the investigations of others along these lines. He showed, for instance, an intimate knowledge of the works of Spallanzani, Stevens, Scopoli, Carminati, Viridet, Werner, Sydenham, Hunter, Marquart, Vauquelin, Tiedemann and Gmelin, Leuret, Lassaigne, Montegre, Prout, Philip, Jackson, Abernathy, Broussais, Paris, and Bostock. When there was occasion to take issue with other investigators, he did so without the slightest hesitation, and in terms which showed his great devotion not only to the subject of physiology, but to medical science in general. In a discussion of theories expounded by other investigators, he gave expression, for example, to the following bit of philosophy, which is quite characteristic:

It is unfortunate for the interest of physiological science that it generally falls to the lot of men of vivid imaginations and great powers of mind to become restive under the restraints of a tedious and routine mode of thinking, and to strike out into bold and original hypotheses to elucidate the operations of nature, or to account for the phenomena that are constantly submitted to their inspection. The process of developing truth by patient and persevering investigation, experiment and research is incompatible with their notions of unrestrained genius. The drudgery of science they leave to humbler and more unpretending contributors. The flight of genius is, however, frequently erratic. The bold and original opinions of Brown for a long time unsettled the practice of medicine, and the later opinions of Montegre and others have had a like effect on the sister science of physiology. It is, however, a right which men of genius possess, in common with others, to propose hypotheses, and to support them with such arguments and deductions as they may have in their power to bring. Great caution and circumspection ought, however, to be observed. It is dangerous to unsettle long established truths, for it is difficult to limit the extent of error. The gratification of a morbid desire to be distinguished as the propagator of new principles in philosophy, or as the head of a new sect, is not the only result to be expected from

such heresies. New opinions or doctrines, whether true or false, will have admirers and followers, and will lead to practical results. And the errors of one man may lead thousands into the same vortex.

These, of course, are designed as general remarks, and I have no wish to apply them, so far as bad motives are inferred, to the highly respectable gentlemen mentioned above. Honest objections, no doubt, are entertained against the doctrine of digestion by the gastric juice. That they are so entertained by these gentlemen, I have no doubt. And I cheerfully concede to them the merit of great ingenuity, talents and learning in raising objections to the commonly received hypothesis, and ability in maintaining their peculiar opinions. But we ought not to allow ourselves to be seduced by the ingenuity of argument or the blandishments of style. Truth, like beauty, when "unadorned is adorned the most," and in prosecuting these experiments and inquiries I believe I have been guided by its light. Facts are more persuasive than arguments, however ingeniously made, and by their eloquence I hope I have been able to plead for the support of those doctrines which have had for their advocates such men as Sydenham, Hunter, Spallanzani, Richerand, Abernathy, Broussais, Philip, Paris, Bostock, the Heidelberg and Paris Professors, Dunglison, and a host of other luminaries in the science of physiology.

Following section 7, he records in greatest detail the four series of experiments conducted at Mackinac, Fort Crawford, Washington, D. C., and Plattsburgh, numbering two hundred and thirty-eight in all. These are followed by the famous table showing the mean time of digestion of the different articles of diet, both in the stomach and on the bath, a table which has not been greatly improved upon to the present day. He ends the work with deductions drawn from the whole, and which he entitles "Inferences From the Foregoing Experiments and Observations." These are worthy of reproduction in full:

1. That animal and farinaceous aliments are more easy of digestion than vegetable.
2. That the susceptibility of digestion does not, however, depend altogether upon natural or chemical distinctions.
3. That digestion is facilitated by minuteness of division and tenderness of fibre, and retarded by opposite qualities.
4. That the ultimate principles of aliment are always the same, from whatever food they may be obtained.
5. That the action of the stomach and its fluids are the same on all kinds of diet.
6. That the digestibility of aliment does not depend upon the quantity of nutrient principles that it contains.
7. That the quantity of food generally taken is more than the wants of the system require, and that such excess, if persevered in, generally

produces not only functional aberration, but diseases of the coats of the stomach.

8. That bulk as well as nutriment is necessary to the articles of diet.

9. That oily food is difficult of digestion, though it contains a large proportion of nutrient principles.

10. That the time required for the digestion of food is various, depending upon the quantity and quality of the food, state of the stomach, etc.; but that the time ordinarily required for the disposal of a moderate meal of the fibrous parts of meat, with bread, etc., is from three to three and a half hours.

11. That solid food of a certain texture is easier of digestion than fluid.

12. That stimulating condiments are injurious to the healthy stomach.

13. That the use of ardent spirits always produces disease of the stomach if persevered in.

14. That hunger is the effect of distention of the vessels that secrete the gastric juice.

15. That the processes of mastication, insalivation, and deglutition, in an abstract point of view, do not in any way affect the digestion of food; or, in other words, when food is introduced directly into the stomach in a finely divided state without these previous steps it is readily and as perfectly digested as when they have been taken.

16. That saliva does not possess the properties of an alimentary solvent.

17. That the first stage of digestion is effected in the stomach.

18. That the natural temperature of the stomach is 100° F.

19. That the temperature is not elevated by the ingestion of food.

20. That exercise elevates the temperature, and that sleep or rest, in a recumbent position, depresses it.

21. That the agent of chymification is the Gastric Juice.

22. That it acts as a solvent of food and alters its properties.

23. That its action is facilitated by the warmth and motions of the stomach.

24. That it contains free Muriatic Acid and some other active chemical principles.

25. That it is never found free in the gastric cavity, but is always excited to discharge itself by the introduction of food or other irritants.

26. That it is secreted from vessels distinct from the mucous follicles.

27. That it is seldom obtained pure, but is generally mixed with mucus and sometimes with saliva. When pure, it is capable of being kept for months, and perhaps for years.

28. That it coagulates albumen, and afterwards dissolves the coagula.

29. That it checks the progress of putrefaction.

30. That the pure gastric juice is fluid, clear, and transparent, without odour, little salt, and perceptibly acid.

31. That, like other chemical agents, it commences its action on food as soon as it comes in contact with it.

32. That it is capable of combining with a certain and fixed quantity

of food, and, when more aliment is presented for its action than it will dissolve, disturbance of the stomach, or "indigestion," will ensue.

33. That it becomes intimately mixed and blended with the ingesta in the stomach by the motions of that organ.

34. That it is invariably the same substance, modified only by admixture with other fluids.

35. That gentle exercise facilitates the digestion of food.

36. That bile is not ordinarily found in the stomach, and is not commonly necessary for the digestion of food; but

37. That, when oily food has been used, it assists its digestion.

38. That chyme is homogenous, but variable in its colour and consistence.

39. That toward the latter stages of chymification it becomes more acid and stimulating, and passes more rapidly from the stomach.

40. That water, ardent spirits, and most other fluids are not affected by the gastric juice, but pass from the stomach soon after they have been received.

41. That the inner coat of the stomach is of a pale pink colour, varying in its hues according to its full or empty state.

42. That in health it is constantly sheathed with a mucus coat.

43. That the gastric juice and mucus are dissimilar in their physical and chemical properties.

44. That the appearance of the interior of the stomach in disease is essentially different from that of its healthy state.

45. That the motions of the stomach produce a constant churning of its contents, and admixture of food and gastric juice.

46. That these motions are in two directions—transversely and longitudinally.

47. That the expulsion of the chyme is assisted by a transverse band, etc.

48. That chyle is formed in the duodenum and small intestines by the action of bile and pancreatic juice on the chyme.

49. That crude chyle is a semi-transparent, whey coloured fluid.

50. That it is further changed by the action of the lacteals and mesenteric glands. This is only an inference from the other facts. It has not been the subject of experiment.

51. That no other fluid produces the same effect on food that gastric juice does, and that it is the only solvent aliment.

The full import of these observations and deductions can be properly appreciated only when one takes into consideration the meagerness and uncertainty of our knowledge of digestion up to that period, and by comparison with the most recent developments of modern times. The status of our knowledge at that time is pretty well summed up in Professor Silliman's letter (page 180). The experiments of Réaumur on buzzards and Stevens on the human

being during the middle and latter part of the eighteenth century had simply revealed that there was a process of solution in the stomach—at any rate, that substances contained in perforated tubes and balls were dissolved out and liberated. It remained for Spallanzani, in 1783, to prove the real solvent powers of the gastric juice within and without the body by means of fluid obtained by the swallowing of sponges attached to strings. He gave to this fluid the name of gastric juice, and established the theory of its chemical powers. Werner, Hunter, and others had shown the gastric juice to be acid in reaction, but it remained for Prout, in 1824, to determine that the acidity was due to free hydrochloric acid. Little more than this was definitely known at this time. A comparison of Beaumont's deductions with those of the most recent workers on the physiology of digestion shows that he anticipated some of their best results, notably the researches of Pavlow on the work of the digestive glands, Cannon on the mechanics of digestion, and others.

In the words of Vaughan, "he made such an exact study of the physical and chemical natures of the gastric juice that, with the exception of the discovery of pepsin, the closest research of modern times has added but little to the work done by him."

The last word on the last page of Beaumont's book is an expression of regret at the incompleteness of his work:

I regret exceedingly that I have not been able to obtain returns from Professor Berzelius, to whom I transmitted about seven months ago a bottle of gastric juice for chemical examination. I could not, however, consistently with the expectations and wishes of my friends, further delay the publication of these experiments.

The immediate sale of the book seemed very satisfactory, though the first edition was probably a small one.* On December 30th the secretary of the navy, Levi Woodbury, wrote Dr. Beaumont:

I have to request that you will be so obliging as to furnish the department with twelve copies of your work upon the "Gastric Juice and Physiology of Digestion" for use of the naval hospitals and service, to be paid on delivery.

He was evidently considerably disappointed in the small number of copies purchased by the Government, as will be shown later in one of his communications to the Navy and War Departments. In

*Osler calls attention to the fact that Beaumont wrote the surgeon-general that the first edition was to be one thousand copies, but states in the preface of the second edition that the first had been three thousand copies.

order to show how favorably the work was received, however, by laymen as well as physicians, I present here a number of letters written by some of the famous men of the day, who were evidently close friends⁹ of Dr. Beaumont. He had sent to each of these gentlemen a copy of his book, in all probability with a special binding, for he states elsewhere that he had fifty copies bound in full sheep.

PERU (N. Y.), 5 Decbr., 1833.

Dr. William Beaumont.

DEAR SIR: I thank you for your volume of "Experiments and observations on the Gastric juice and the Physiology of Digestion," and, although I have no pretention to medical science, I have read it with great interest and satisfaction. If it had been a mere theoretical treatise on that difficult and mysterious subject, I should not presume to express an opinion on its merits, however plausible and ingenious. But the facts and demonstrations exhibited in your patient and laborious series of Experiments, the clear and discriminating inferences which you deduce, together with your modest history of the extraordinary case of Alexis St. Martin, excite my admiration and respect.

The work cannot fail to correct false theories, to render a valuable accession to the common fund of useful knowledge, and to place your name on the Roll of public benefactors. With great respect and cordial esteem,

Dear Sir, yr. obedient servt.

JONAS PLATT, Judge.¹⁰

WASHINGTON, Dec. 31, 1833.

DEAR SIR: I thank you for the work you have presented. It is no less curious and valuable. By your skillful management of a most desperate wound you have been enabled to reveal some of the most important functions of the human system. And I sincerely trust that your useful and disinterested labors may add to your professional character and advancement.

Respectfully your obt. Svt.

LEWIS CASS.¹¹

Jan. 1, 1834.

Mr. Van Buren¹² presents his compliments to Dr. Beaumont, and thanks him very kindly for a copy of his work, which Mr. V. B. was very desirous of possessing.

⁹ Among his papers I found a large number of calling cards from these and many other men of great prominence.

¹⁰ The friendship of Jonas Platt dated back to the period of Beaumont's residence in and around Plattsburgh during the War of 1812. He had been judge of the Supreme Court, general of cavalry in the state militia, and senator. Advancement in years led him to retire in 1829 to his farm in Peru, seven miles from Plattsburgh. He is said to have been "one of the most distinguished men in the state—wise, upright, and patriotic, as well as learned, eloquent, and able." His portrait now occupies a prominent place in the capitol in Albany.

¹¹ Secretary of war from 1831 to 1836.

¹² Martin Van Buren, at this time vice-president of the United States.

27 January, 1834.

R. H. Wilde¹³ will not delay his acknowledgement to Dr. Beaumont until he has had an opportunity of reading the whole of the Volume the Dr. has had the politeness to send him. Though his knowledge of Physiology is very slight, he hopes it is enough to understand the value of the experiments made, partially at least, and the time, industry and expense they must have cost.

The subject is not entirely new to him, as his attention was called to it a year since by his friend, Dr. Dunglison, and a notice of the very interesting Character of the experiments, which was published in the *Intelligencer*.

An opportunity of trying such is of so very rare occurrence that the world is greatly indebted to Dr. B. for having prosecuted them so long and patiently, and with such success. R. H. W. desires to return his sincere thanks to Dr. Beaumont for so rich a contribution to the Stock of human knowledge on a very obscure and highly curious topic, and to assure the Dr. of his wish to aid by every means in his power in making the work as extensively known as it deserves to be.

SENATE CHAMBER, Jany. 28th, 1834.

DEAR SIR: I have the honor to acknowledge the receipt of your very acceptable book, containing "Experiments and observations on the gastric juice and the physiology of digestion," and to express the admiration which I have felt in following the course of the curious and interesting experiments which you have made. Very respectfully, Sir,

Yr. Obedient Servant,

THOMAS H. BENTON.¹⁴

WASHINGTON, 4th Feby., 1834.

DEAR SIR: I have received the Copy of your interesting work, with which I had already made myself acquainted. Be pleased to accept my thanks for your attention. I deem it a work of great interest and importance; highly creditable to yourself for the manner in which the experiments are conducted, and likely to attract a great degree of attention throughout the world. I am, Dear Sir, with high respect,

Faithfully yours,

E. EVERETT.¹⁵

WASHINGTON, 5th February, 1834.

SIR: I have received, and looked over as far as my leisure would permit, the volume of "Experiments" you were so kind as to send me.

In whatever light the book may be viewed, it is truly a work of most

¹³ R. H. Wilde, member of Congress from Georgia, was made attorney-general of his state in 1815 and representative in 1827. He was author as well as statesman, having composed the popular song, "My Life is Like the Summer Rose," and made important contributions to the study of Dante's life.

¹⁴ Thomas Hart Benton, on Missouri's admission to the Union in 1820, was made senator, and held the office for thirty consecutive years, during which he ranked with Calhoun, Clay, and Webster, and was considered Calhoun's most formidable opponent in the Senate.

¹⁵ Edward Everett was at this time a member of Congress, and showed much interest in the work in which Beaumont had been engaged.

Senate Chamber,
Saug. 28th/1854.

Dear Sir,

Have the honor to acknowledge the receipt of your very amiable book, containing "Experiments and observations on the gastric juice and the physiology of digestion," and to express the admiration which these facts in following the course of the curious and interesting experiments which you have made.

Very respectfully,
Sir,
Yr. Obedient Servant.
Thomas H. Benton.

A letter from Senator Thomas Hart Benton, expressing his appreciation of a volume of "Beaumont's Experiments."

surpassing interest, and I am at a loss for terms to convey my sense of the obligations under which you have placed, not your profession only, but the whole family of man. The efforts and the sacrifices required to procure and retain St. Martin, the patient perseverance bestowed for years on a course of experiments, which must have received the most delicate and unremitting attention, as well as the important and peculiar nature of your discoveries, cannot fail to be appreciated by intelligent men in all countries and in all future time, for no one can rise from a perusal of the work without an abiding sense of gratitude for the laborious and well directed researches of its author. I am very respectfully,

Yr. obliged and obt. svt.

P. C. FULLER.¹⁶

¹⁶ Philo C. Fuller, Genesee, N. Y., member of Congress 1833-36, assistant post-master-general 1841-43, comptroller state of New York 1850-51.

March 6, 1834.

Mr. Justice Story¹⁷ begs Doctor Beaumont to accept his thanks for the valuable present of his recent work on the Gastric Juice and the Physiology of Digestion. The subject is full of importance and interest, and Mr. S. hopes soon to have leisure to read the whole work with care, and has received a great deal of instruction and pleasure from the portion of its contents which he has been able to peruse. Mr. S. deems it an honor to have an opportunity of placing in his library such a work from the kindness of its author.

PARIS, 16 March, 1834.

MY DEAR SIR: I am very much obliged to you for Dr. Beaumont's book of experiments, of which I have kept one copy and given the others to Orfila,¹⁸ the Dean of the faculty of medicine, to the Academy of Science of the Institute, and to the Academy of the body of which I am a member. In the Academy of Science it has been referred to a committee to determine whether any additional experiments to those reported by Dr. Beaumont are necessary for the interest of medical science, and, if so, whether it will be expedient to send for the man here, or to request that the experiments be made in the United States. As soon as the report is made, I will send it to you.

EDWARD LIVINGSTON.¹⁹

To all of these panegyrics from illustrious friends were added the cheering words of his good wife Deborah:

Tomorrow I shall hear from you, and know if you have seen all the mighty puffs. . . . I need not say how much I feel gratified by the encomiums bestowed upon your work by the public. I see that one of the editors pronounced you a great scholar. That was particularly pleasing, as on that point . . . Samuel was most uneasy, as he said you nor himself were either scholars. May you see all your wishes accomplished, and be ready ere long to settle down quietly with your family, who all love you so much, is the prayer of your wife.

In spite of all these encomiums, he was, however, doomed to a certain degree of disappointment, as might be expected of one who had become so deeply engrossed in his subject that it was difficult for him to understand why every one could not feel the same interest. As mentioned in a former letter, he was desirous of having the book copyrighted and published in England. With this in view, Professor Jones, on behalf of Dr. Beaumont, communicated with a friend, evidently an author, in England, requesting him to

¹⁷ Joseph Story, associate justice of the United States Supreme Court.

¹⁸ Mathieu Joseph Bonaventure Orfila was founder of the science of toxicology, professor of chemistry and toxicology, and for eighteen years dean of the medical faculty in Paris.

¹⁹ Ambassador to France.

secure a publisher in London. The friend responded with great regret and much surprise that he had been unable to obtain a publisher, and inclosed the following notes, which he received from two of them in response to his offer:

FLEET ST., Feb. 20th, 1834.

DEAR SIR: I have returned Beaumont's Experiments, as I do not feel inclined to make an offer for it.

Your obed. Servt.,

L. HIGHLY.

356 STRAND, Feb. 24th, 1834.

SIR: I am much obliged by the offer of Beaumont's experiments, but regret to inform you it is not a work which I should like to reprint.

I remain yours obediently,

HENRY RENSHAW.

Dr. Jones wrote Dr. Beaumont concerning the matter:

I herewith transmit to you a letter and papers received from Mr. Vail, by which you will perceive that he has not been inattentive to the request made relating to your book. It would have afforded me the most sincere pleasure to have aided you in producing a more welcome result; it would seem, however, that the deposits have been removed in England as well as with us. It is a known fact, however, that the publishing business has been much depressed for two or three years past, both in England and France. That your labors will be appreciated and recorded to your honor by the scientific physiologists, I am well convinced, and I am sure, also, that this will be very welcome remuneration; it is one, however, which will not "make the pot boil"—a thing of some importance in our mundane transactions. It is really as necessary to have something for the gastric juice to act upon as it is to know how it operates.

That Dr. Beaumont had not been neglecting the material side of life while so deeply engrossed in the fascinating problems of physiology, that he was providing his family with that "something for the gastric juice to act upon" at the same time that he was providing the world with a knowledge of "how it operates," is pretty well demonstrated by a "memo" which he jotted down just before leaving Plattsburgh on December 8, 1833, calling attention to his belongings:

I own a lot of Land at Prairie du Chien, M. T., about 140 acres, near Fort Crawford; title good; Warrantee deed, duly executed by Mr. H. Dousman, and on the records at the Clerk's office of Crawford City, Michigan Ter; a house built thereon and a small Stable; value of the property

\$1200, and increasing. T. P. Burnett, Esqr., of Prairie du Chien, my Agent and attorney for Renting, paying taxes, etc. Rent due from 1st of April, 1833, at about 150 dollars for the whole, conditional with circumstances and also an acct. of \$20 against Mr. Cochran for collection.

A city Lot at Green Bay; title Warranted by Daniel Whitney, Esqr., of Green Bay. Deed on Record in Clerks office, Brown County, M. T.

Mortgage transferred from Bailey and Hohns, N. Y., on farms formerly belonging to the heirs of N. Smith, in the hands of Judge Halle, and also Mr. Wm. Swetland's receipt for the money, \$175, paid by me through Mr. Halle; he has the receipt.

My library, Surgical Instruments, Notes of experiments, drawings, and engravings of Stomach, etc., with Dr. Samuel Beaumont. He has also Memorandums and instructions for superintending the distribution and sale of my Book of Expts., etc.

Mortgages, Deed Recpts., old accounts, Public and miscellaneous papers, correspondence with sundry persons on subject of my publication, etc., in a Black Leather Trunk. Alexis Contract, commencing December 1st, 1833, for two years at \$200 per annum unless sooner discharged. He has \$10 due him on old contract. He drew his pay as Sergeant in the U. S. Ay. up to Nov. 1st, 1833, of Major Kerby, Paymstr. U. S. A., of Brownville, at the rate of \$12 monthly pay—\$2.50 per mo. for clothing and 10 cts. per day for subsistence. I have drawn my pay of Maj. Kerby, paymaster, to the 1st of Nov., 1833. I have drawn from the government my regular allowance for fuel and quarters from the 1st of July, 1833, to the time I leave Plattsburgh, and also my transportation from N. York to Plattsburgh on July 1st, per order. I shall be entitled to transportation from Plattsburgh to Washington when I shall have accomplished the journey.

My anatomical preparations are in Drs. Mower and Kane's office.

I am not aware that I owe anybody a cent, except Mr. Thos. Green and Mr. E. Smith when he has finished binding my Books. Will then settle to 8 cts. for all he binds in board and 28 cts. for 50 bound full in Sheep, and perhaps a few dollars for contingencies. Dr. Samuel will settle with him.

CHAPTER X.

1834-1835.

Some time prior to this Dr. Beaumont conceived the idea of asking aid of the Government to remunerate him for the expenses already incurred, and to enable him to continue his experiments on digestion, keeping constantly in mind the possibility of taking Alexis abroad for further investigation. Not being a politician, he took advantage of his close association with those who knew the ins and outs at Washington. Whenever a new idea occurred to him, Surgeon-General Lovell was the first one to whom he communicated it, and so in this case. Therefore, even before leaving Plattsburgh, he informed Dr. Lovell of his intentions, and received promptly from him this excellent advice:

As to the application to Congress, the best and most efficient aid your friends can give you is to interest individual members to take up and urge the matter through. Memorials and testimonials formally presented to Congress soon find their way into the table drawer or breeches pocket of the chairman of some committee, where they sleep quietly unless the constituents make it their interest and business to look after them and call them up. Let plenty of letters to this effect be written after the session has commenced, or they will forget every word about it by the time they reach the confines of the District, with their brains addled with statistics, etc.

It is very probable that this particular matter prompted Beaumont to request a call to the capital as soon as he had finished his work at Plattsburgh. The Twenty-third Congress was now in session, and, if he wished any action on his behalf at this time, it would be well for him to be on the scene to start the ball rolling. This he did immediately on arriving at Washington, and before very long had succeeded in interesting a number of very prominent men in both houses of Congress. A letter from Azariah C. Flagg,¹ one of the most astute politicians in the state of New York, showed Beaumont to have been a very apt pupil in matters political as well as those scientific. Mr. Flagg had been secretary of state under Governor Clinton, and was now comptroller of New York and a

¹ Azariah Culling Flagg succeeded Colonel Melancthon Smith as editor of the *Plattsburgh Republican* in December, 1811, and continued as such until 1826. It was evidently during this period that he and Dr. Beaumont became friends.

member of the "Albany Regency," a group of politicians who controlled New York by a system of rewards for partisan service. The Regency numbered among its members such men as Martin Van Buren, Benjamin F. Butler, and Silas Wright, Democratic senator from New York. On December 19, 1833, Mr. Flagg wrote to Beaumont from Albany:

I have written to Mr. Wright, telling him that if your application can be presented on such grounds as not to conflict with any of the vetoes, that you are in all respects deserving of his friendly aid. I suppose that the connection of your experiments with the medical service of the United States army and navy would justify an appropriation, to remunerate for past as well as prospective services in these experiments with reference to medical science solely, as connected with the public service. It is important that you present your memorial in such a shape that it will be easily *digested* by Congress.

Dr. Franklin Bache, of Philadelphia, to whom he had also applied for support, with the request that he obtain the opinions of other medical men in that city, replied:

I have just received your letter reporting the memorial which you intend to present to Congress. It appears to me that you deserve much credit for your perseverance and public spirit in presenting your experiments, and, as their results are really a public benefit from their enlightening us on a subject which concerns every one, whether in health or disease, I think that private zeal ought not to be allowed to suffer in a pecuniary point of view. Your labors were undertaken and prosecuted with disinterested motives, so far as your original intention is concerned; and if, now, your expenses incurred in prosecuting a highly useful branch of inquiry are so heavy as to have determined you to apply to Congress, I think you ought to be indemnified, both as a proper reward to yourself and as an encouragement to future zealous citizens who may incur expenses in the successful investigation of useful branches of knowledge. In regard to the opinions of other medical men of this city, I would respectfully suggest that you had better ascertain them by direct communication with those whose views you would wish to possess. I think it would be highly important if your experiments could be prosecuted, and that at public expense.

Having received encouragement, written and verbal, from practically every one to whom he applied, he memorialized Congress in the early part of January as follows:²

²This is a copy from manuscript of the second memorial presented by Dr. Beaumont, in 1835, at the suggestion of Mr. Everett, and therefore does not include the paragraph requesting funds with which to continue the work. I was unable to find a copy of the first memorial.

To the Honorable, The Senate and House of Representatives of the United States of America, in Congress assembled.

The memorial of William Beaumont, Surgeon in the Army of the United States, respectfully represents that a most favorable opportunity having been afforded for improving the science of medicine and physiology, and of ascertaining and testing the powers and functions of the human Stomach, which has never before occurred under such favorable circumstances; That Your memorialist has been at great pains and expense in relation to the individual whose care affords the facilities alluded to, a brief account of which, and Your Petitioner's exertions to persevere, sustain and bring him and his case before the public for the general improvement of the science of health, Your petitioner will relate:

Alexis St. Martin, the person referred to, was an indigent inhabitant of the county of Michillimackinac, Michg. Ter.—not a soldier, but dependent entirely on his daily labor for his subsistence and support, and without friend or relative to take care of or provide for him in the misfortune which befel him.

In the month of June, 1822, he being on the Island of Michillimackinac, in Lake Huron, was most dangerously wounded by the accidental discharge of a heavily loaded musket. The wound was received just under the left breast, and supposed at the time to have been mortal. A large portion of the side was blown off, the ribs fractured, and openings made into the cavities of the chest and abdomen, through which protruded portions of the Lungs and Stomach, much lacerated and burnt, exhibiting altogether an appalling and hopeless case. The Diaphragm was lacerated, and a perforation made directly into the cavity of the Stomach, through which food was escaping at the time Your memorialist was called to his relief.

His life was at first despaired of, but he very unexpectedly survived the immediate effects of the wound, and necessarily continued a long time under the constant professional care and treatment of your memorialist, and, by the blessing of God, finally recovered his health and strength.

At the end of about 10 months the wound was partially healed, but he was still an object altogether miserable and helpless. In this situation he was declared a "common pauper" by the civil authorities of the county, and it was resolved by them that they were not able nor required to provide for or support, and finally declined taking care of him, and, in pursuance of what they probably believed to be their public duty, authorized by the laws of the Territory, were about to transport him in this condition to the place of his nativity in Lower Canada, a distance of more than fifteen hundred miles.

Believing the life of St. Martin must inevitably be sacrificed if such attempt to remove him should be carried into execution at that time, Your Memorialist, after earnest, repeated, but unavailing remonstrances against such a course of proceedings, resolved, as the only way to rescue St. Martin from impending misery and death, and to arrest the process of transportation and prevent the consequent suffering, by taking him into

his own private family, where all the care and attentions were bestowed that his condition required.

St. Martin was at this time, as before intimated, altogether helpless and suffering under the debilitating effects of his wound—naked and destitute of everything. In this situation Your Memorialist received, kept, nursed, medically and surgically treated, and sustained him at much inconvenience and expense, for nearly two years; dressed his wounds daily, and for considerable part of the time twice a day; nursed him, fed him, clothed him, lodged him, and furnished him with such necessaries and comforts as his condition and suffering required.

At the end of these two years he had become able to walk and help himself a little, though unable to provide for his own necessities. In this situation Your Memorialist retained St. Martin in his family for the special purpose of making physiological experiments after he should have sufficiently recovered to admit of this being commenced.

The peculiar condition of St. Martin's stomach, your memorialist verily believed, afforded the fairest opportunity and greatest facilities for improving an important branch of medical science that ever had, or ever would probably be, presented, the wound in healing having left an open aperture of considerable size directly into the Stomach, through which food, drink and other substances could be passed into and from any part of its cavity, and by means of which experiments and observations of much importance to physiology have been and may continue to be made, with useful and satisfactory results.

His general health, after four or five years, being greatly improved, and consequently his necessity for the professional care and attentions of your memorialist being lessened, it has been more difficult to retain St. Martin for the purpose of pursuing those physiological researches which had been commenced. Consequently your memorialist had not only to be at the trouble and expense of frequently seeking him in Canada after an unexpected absence of several years, but was obliged to pay him high wages to induce him to return and submit to the necessary examinations and experiments upon his stomach and its fluids for the purposes herein expressed.

Your memorialist also respectfully represents that the expense incurred by him on account of St. Martin since the time he was wounded—June, 1822—for professional attendance, dressings, medicine, nursing, etc., at reasonable charges, upon the principles of justice, equity and the common usages of profession, would amount to not less than one thousand—\$1000.00.

That the expenses incurred for subsisting, providing for, and retaining St. Martin, money expended and wages paid, chiefly to induce him to submit to the necessarily required examination and experiments, would exceed, in the opinion of your memorialist, the average sum of Five hundred dollars per annum for Eight out of nearly Twelve years since he received the wound in June, 1822, which would amount to Four thousand dollars—\$4000.00.

Besides the ordinary expenses above stated, your memorialist, stationed for thirteen years preceding the autumn of 1832 at the extreme North and Western frontier military posts of our country, the better to secure and perpetuate the advantages of this signal opportunity for physiological experiments, has been under the necessity of incurring the additional expenses of transporting St. Martin from place to place—from Mackinac to Montreal in 1825, from thence with his family to Fort Crawford on the upper Mississippi, and back again to Berthier, L. C., in the years 1829 and '31, a total distance of more than five thousand miles—and subsequently, with a view to demonstrate and diffuse such interesting facts and useful information as may have been developed in this case, and afford favorable opportunity for more thorough and scientific research and investigation of this important subject. Your memorialist has also incurred the extra expense of travelling with St. Martin to several of the principal cities in the U. States—to Boston, New York, New Haven, Washington, etc.—and prosecuting the “experiments and observations on the Gastric juice and the physiology of Digestion” for several months at the private and individual responsibility and expense of your memorialist.

As your memorialist has not only supported St. Martin alone, but, in order to secure the benefits of his submission to the experiments, has been obliged to provide for and maintain his family, consisting of a wife and three small children, for more than three years, and has them now on his hands for protection and support, without public munificence, and with no other indemnification at present than the thanks of an indigent man for the preservation of his life, and the humble gratitude of his helpless family for their sustenance and protection.

Your memorialist also represents that he has, with much labor and expense, composed and published a volume of “experiments and observations on the Gastric juice and the physiology of Digestion,” comprising nearly three hundred experiments, with a hope of permanently recording the facts and extending the benefits of his researches in this extraordinary case. But as this branch of professional science will probably be uninteresting to the general reader, the sale of the book will be so limited as not to promise an indemnity even for the expense of the mechanical part of the work.

Besides all these extra expenses, labors and exertions, your memorialist has continued constantly and faithfully to perform his public official duties as Surgeon of the United States Army without intermission, and without receiving additional indulgence or remuneration from the Government. These Experimental services were wholly extra, unofficial and voluntarily performed, and not even required of him either by common usage or the Regulation of the Army, but were executed in obedience to the dictates of humanity, a desire to benefit community, promote the blessings of health, and perpetuate the signal advantages of this extraordinary case and opportunity for improvement.

And your memorialist will further represent that the pay now allowed

to Surgeons of the Army, a stipend barely sufficient to cancel the ordinarily current expenses of a military life, has been greatly insufficient for the last three or four years to defray the increased expenses he has necessarily incurred in sustaining, prosecuting and bringing forward this subject for public and professional consideration and improvement.

Conscious, therefore, of the inadequacy of his individual means to sustain, without injustice to himself, the expenses already incurred, or further to prosecute the subject unaided; humbly conceiving himself justly entitled to a fair remuneration for those extra services, and believing them useful and important to the interests of the medical profession, the science of health, and particularly to the Army and Navy, which, from the nature of their respective services, are more exposed to the ravages of disease and the deleterious effects of irregular subsistence and improper diet and drinks, your memorialist respectfully and earnestly solicits Congress to grant him an extra allowance of One dollar and twenty-five cents per diem, the compensation usually allowed to officers of the Army when performing extra duties, for the time he has actually been engaged in professionally attending and restoring St. Martin to health, and in making the said experiments and observations. . . . The first period to embrace the time between the 6th of June, 1822, and the last of May, 1825, during which he was recovering from his wounds under medical care and treatment of your memorialist, being ten hundred and fifty-nine days at \$1.25—\$1323.75. The Second period to include the time between the first of January, 1830, and the 1st of January, 1834, being 1460 days—\$1825.00. During the last period the principal experiments were performed.

The merits of Your Memorialist's humble labors, and his motives for pursuing the object of these experiments and securing the benefits that may result therefrom, are left to the scrutinizing intelligence of the present age to discover, and to the justice of those who may come after to appreciate and apply.

Trusting to the liberal policy and enlightened patriotism of an American Congress for a just decision in the premises,

Very respectfully, Your Petitioner, etc., etc.,

WM. BEAUMONT,
Surgeon U. S. Ay.

The memorial was sent to a committee of which Hon. Asher Robbins, senator from Rhode Island, was chairman, and he proceeded at once to investigate the value of Beaumont's work and the merits of his claims. Among others, he requested Professor Sewall, Professor Dunglison, and Surgeon-General Lovell for their opinions as to the value of the work, and it is needless to state that they were entirely favorable. Dr. Sewall wrote:

It gives me great pleasure to comply with your request in laying before you, as chairman of the Committee of the U. S. Senate, my opinion of the

Experiments and observations of Dr. Beaumont upon the Gastric Juice and the Physiology of Digestion. No subject in Physiology has been more extensively investigated, or received a larger share of the attention of medical men, than the functions of digestion, and none surely is more worthy of consideration. But, unfortunately, no case in the history of our science before that of St. Martin has ever occurred affording equal facilities for observation and experiment. . . . And should the Doctor be enabled by the Munificence of the Government to avail himself of the extraordinary case of St. Martin to prosecute the investigations to its utmost limits, an opportunity which has never before and which may probably never again occur, I have no doubt he will establish the great principle of this important function of the animal economy upon a firm foundation.

Dr. Beaumont's sacrifices of time and money in the prosecution of these experiments have been great, and such as he cannot expect to have remunerated by the sale of his book. He justly merits, as I conceive, the grateful acknowledgements of the medical Profession, and I should hope he might be sustained in his laudable efforts by the fostering hand of our enlightened and liberal Government.

Professor Dunglison³ reviewed the work, and added :

There are yet, however, many obscure points connected with the physiology of digestion, and many circumstances touching the relative digestibility of various aliments and the action of the Gastric secretions, that demand investigation, and any facilities that could be afforded to Dr. Beaumont for this purpose could not fail to result in the improvement of science and the advancement of the public good.

Based on the tenor of these reports, Mr. Robbins presented the memorial to the Senate on January 27th, and it was immediately referred to the Joint Committee on the Library of Congress. This committee, too, promptly began an investigation of the merits of the case, and sent requests to various physicians in Washington for their written opinions concerning the subject in hand. Thomas Henderson, professor of theory and practice of medicine in the Columbian College, sent the committee a full synopsis of the work, and added :

The facts already established here, whilst they confirm the conclusions of some of the gifted cultivators of the science, whose genius and sagacity led them on by more imperfect aids to the wonderful approximation of the truth, have forever put to flight the visionary hypotheses and fallacious theories which have been taught for ages in the schools of medicine and have exerted a pernicious influence over their practice.

³Then professor of therapeutics, hygiene, and medical jurisprudence in the University of Maryland, Baltimore.

False hypotheses in medicine, above all the other sciences, must be productive of the worst consequences, as from false theories false practical deductions will necessarily be drawn, which may be destructive of human life; and surely any measures which will aid in the establishment of a single fact in an inquiry of such importance cannot be considered as unworthy the attention of the Philosopher or the Legislator. . . .

I feel it my duty, therefore, respectfully to recommend that every facility be afforded to Dr. Beaumont for the continuation of these interesting researches whilst nature (we may literally say) has drawn aside the veil and exposed to view her hidden operations, and which may soon again be closed upon the inquiring eye of science for ages to come.

A petition signed by Abel Huntington, John Thompson, and Robert Mitchell, members of the medical profession and of the House of Representatives as well, concluded with the appeal:

It would seem to be the part of wise legislation to encourage the continuance of these experiments, with prospective views of benefit to the interests of science and humanity.

The strongest appeal was sent to the committee by several members of the faculty of the Columbian College, among whom were Thomas B. Jones, professor of chemistry; I. C. Hall, professor of surgery, and Thomas Henderson. They said:

. . . It is a fact, which must strike every reflecting mind with great force and effect, that no such instance has ever before occurred. It is true that persons with wounds of the stomach have been seen, and experiments to very limited and unsatisfactory extent have been made. Two or three instances, perhaps, are mentioned in our medical records. But most assuredly no such case as the one here alluded to has ever been seen. In this case no limits are set to the extent and diversity of experimental investigation. The size of the orifice of the stomach, the quantity of gastric juice to be obtained, the control over the man (who will submit to no other experimenter), the devotion of Dr. Beaumont and his almost enthusiastic purpose to elicit all that can be drawn from it, the success already attending his inquiries, all make this case the only instance that we have ever had from which all may be learned that is to be learned. This appeal, now made to the liberal and enlightened minds of your honl. committee, will readily be excused when rightly appreciated. It comes from the science of medicine, it comes peculiarly from American medical science, it is directed to those whose judgment and learning concurrently acknowledge the force of the appeal. It asks not to be allowed to pass away, without yielding all its influence to medical inquiry, that which has never occurred before, and which, of all things, is least likely to ever occur again.

It is probably already known to your committee what Dr. Beaumont has accomplished. The reviews tell favorably of his labors; the news-

papers teem with popular allusions to his experiments. The doctor has done this at great pecuniary sacrifice; he has done it from an unsophisticated spirit of scientific curiosity. There is but one feeling in the medical world toward him—a feeling of respect and gratitude for his excellent work. Dr. Beaumont knows and says that he has but a glimmering light which is to be shed by a further prosecution of the inquiry. He proposes to issue a circular to the distinguished physiologists of America and Europe, asking them to propose to him the various truths it is important to develop, and the surest methods of arriving at these truths. He knows nothing but disinterestedness and love of science. In no better hands could the case have fallen, to no better hands can you safely commit the patronage, pecuniary and official, which it is thought the Government, from its contingent resources, can amply bestow. . . .

To contribute to these results, to be known now and hereafter as the patrons by whose liberal decisions they have been rendered accessible, is matter of reasonable pride, as it will be of perpetual credit, in the annals of our science. Nor is it unworthy, in our humble opinions, of the consideration of your Honorable Committee that to facilitate the consummation of Dr. Beaumont's purposes will redound to the character of the medical staff of the U. S. Army in that one of its members shall have made such a contribution to science.

In spite of these eloquent appeals, and the fact that no less a personage than Hon. Edward Everett was fathering the movement in the House of Representatives, and had succeeded in appending an amendment to the appropriation bill granting Dr. Beaumont \$10,000, the cause was lost. To the great discredit of the Twenty-third Congress, there is to be found spread upon its journals this record:⁴

The House then proceeded to consideration of bill 246, making appropriations for support of army of 1834. The amendments were read and severally put, concurred in by the House, except the 2d, which read, "For extra allowance to Surgeon Beaumont, of the U. S. A., at the rate of \$1.25 per day, commencing Jan. 1, 1831, \$1,825, etc.," and on the question it was decided in the negative, 56—129. The ayes and nays were called for and taken.

The defeat of the amendment is said to have been due to the "theoretical objection to the appropriation by Congress of money for any scientific or philanthropic purposes whatever." While it was unusual in that day for Congress to make appropriations for such purposes, the real obstacle in this case was doubtless a proper lack of appreciation of the work by the members of Congress.

⁴ Journal of House of Representatives, March 14, 1834, first session of Twenty-third Congress.

An amusing effusion, taken from the Washington *Evening Star*, probably voiced the sentiments of many of the wise legislators who opposed the measure. It is only too true that a little ridicule may completely offset in the popular mind the results of much serious thought and scientific labor.

To the Chairman of the Military Committee, Washington.

SIR: I perceive by the papers that a provision has been slipped into the military appropriation bill making a certain compensation to Dr. Beaumont. For what? It appears that the Doctor undertook to cure a man who had received a wound in his side. He did not heal the wound. An aperture thus remained, by which an inspection could be had of the stomach, and of the operation of the gastric juice on various articles of food. He noticed this operation, and has stated the result.

Does this display such science and genius as to entitle the Doctor to a national remuneration? and that, too, by a special act of Congress? -

He is already paid for his medical services as a Surgeon in the Army, and the law of a copy-right secures him any further compensation which the public may think his published discoveries are entitled to.

Besides, sir, there is a fallacy in the whole business. Digestion is a chymical process, and no two things are more different than a chymical process carried on in the presence and, again, in the absence of the atmospheric air. The gastric juice performs its operations in whole bodies without the presence of atmospheric air; in the present instance atmospheric air is present in the stomach.

Gastric juice being essentially the same in human and animal stomach, far more satisfactory experiments have long since been made on the solvent power of that juice for the purpose of digestion by feeding dogs with various food, and under a variety of circumstances as regards sleep, exercise, hunger, repletion, etc., and then cutting open the stomach at different stages in the process of digestion. The results have been published to the world long and long ago.

MEDICUS.

Mr. Everett was much disappointed at the fate of his pet measure, and promptly conveyed his feelings in the matter to Dr. Beaumont, at the same time suggesting that he should not be discouraged, but that he try a "new tack."

HOUSE OF REPRESENTATIVES, 1 April, 1834.

DEAR SIR: I have your favor of the 24th March. I was much mortified at the fate of my amendment to the Appropriation bill in your favor, but not much disappointed. My only hope was that it would be carried through the House without exciting its attention. As soon as the Constitutional question was started, I feared for the result. . . .

It is true that some members were of opinion that St. Martin was a soldier. I thought so myself at first, and so stated when the amendment

was first moved. The fact that he was not a soldier, to which you attach a good deal of importance in your letter, instead of strengthening, weakens the claim in the judgments of a great many of the members—not in mine. The great difficulty lies in the theoretical objection to the Appropriation by Congress of money for any scientific or philanthropic purpose whatever.

both will eventually have a large sale. A
larger, I think, if the price ~~is~~ lower.
I wrote to my brother, the Editor of the N. A.
Review, desiring him to procure a notice of
it for the number just published. I perceive
it does not contain such a notice; & I suppose
my brother has not found any one to under-
take it. If you know among your profession-
al friends any one, who will undertake it,
you had better suggest it to him.
 Hoping that you may eventually reap
a reward both of profit & honor, commensu-
rate to your meritorious & happy labors in
this matter, I am,
Dear Sir,
Most respectfully Yours,
Edward Everett

A portion of the letter from Edward Everett, in which he deprecates the fate of the bill asking for an appropriation by Congress for Dr. Beaumont.

I suppose that a few members who voted against the amendment did so because they disliked to have it brought forward in that way, but I am fearful the great objection lies deeper.

Nevertheless, I would not wholly discourage you. I think, if you should present a New Memorial,⁵ substantially the same as that which you presented in the Senate, setting forth what you have expended and asking some compensation, but not proposing an appropriation for the Continuance of the Experiments, there might be a chance of success. If you wish it, I will return you the Memorial, to receive these modifications.

⁵This suggestion was adopted, and carried into effect at the succeeding session of Congress.

Upon the whole, however, your reliance must be on the curiosity and intelligence of the Medical profession and the public at large. Your book will eventually have a large sale—a larger, I think, if the price were lower. I wrote to my brother, the editor of the *N. A. Review*, desiring him to procure a notice of it for the number just published. I perceive it does not contain such a notice, and I suppose my brother has not found any one to undertake it. If you know among your professional friends any one who will undertake it, you had better suggest it to him.

Hoping that you may eventually reap a reward, both of profit and honor, commensurate to your meritorious and happy labors in this matter, I am,

Dear Sir, Most respectfully Yours,

EDWARD EVERETT.

Beaumont was not one to be easily discouraged. Even if his work had not received all the recognition and encouragement at home that it deserved, it had made him an international character. His work had been presented to the Academy of Science.⁶ Reviews were to be found in a number of the foreign journals, among which may be mentioned *The Athenæum*, and, more important still, a German edition⁷ had been issued, with the title: "Neue Versuche und Beobachtungen über den Magensaft und die Physiologie der Verdauung. Auf eine höchst merkwürdige Weise, während einer Reihe von sieben Jahren, an einem und demselben Subjecte angestellt, von Dr. Wilhelm Beaumont, Wundarzt in der Armee der vereinigten Staaten Nordamerika's. Aus dem Englischen übersetzt von Dr. Bernhard Luden, prakt. Arzt in New York. Mit drei lithographirten Abbildungen. Leipzig, 1834. Christian Ernst Kollmann."

⁶ *The Athenæum of English and Foreign Literature, Science and the Fine Arts*, London, Saturday, April 19, 1834. Osler calls attention to the fact that the earlier reports of the case had been abstracted in the *Magazin der ausländischen Litteratur des gesammten eilkunde*,amburg, 1826, and the *Archives generales de Medicine*, Paris, 1828. The American medical publications were few in number at this period, and, while practically all of them reviewed the work, but two or three seemed to have recognized the full import of this great American scientific product. One of the most complete reviews appeared in the *American Journal of Science and Arts*, vol. XXVI, July, 1834. In the May number (1834) of the *Western Medical Gazette*, of Cincinnati, there appeared a rather long, unfavorable review. I found in manuscript a long and forceful reply to this review, which doubtless appeared in a later number of the *Gazette*. It was entitled "Observations on the Review of Beaumont on the Gastric Juice, etc.," by a reader. This reply was signed by O. P. Q., and was supposedly written by Mr. J. H. Freleigh, an intimate friend of Dr. Beaumont. Judging by the style of the article and the writer's intimate knowledge of the subject in hand, one may justly conclude that this retort was either written by Beaumont himself or inspired by him.

⁷ While it has been stated that the work had been translated into French, I have been unable to find any record of such a translation. The work was presented before the French Academy through the efforts of Mr. Livingston, and it is possible that this fact led to the statement that the work had been translated into French. Osler also states that he was unable to find a French edition of the work.

His determination, therefore, to continue his efforts in the further study of digestion was in no way dampened. His plans were, however, delayed by the receipt of an order on March 4th:

Secretary of War directs that you proceed with convenient dispatch to Forts Trumbull, Walcott, Preble, Constitution, Sullivan and Hancock Barracks on a tour of inspection of the hospitals, under the head of Medical Director. Having finished this duty, your services will be required at Jefferson Barracks.

He performed this duty between April 16th and May 9th. and on May 17th sent to the surgeon-general a full, detailed report of his investigation, which he concluded with the statement:

In the whole course of my examinations of the several stations, Hospitals, Climates, Clothing, subsistence, exercise and employment of the Soldier, I have not been able to discover appreciable, adequate cause for the production of any particular kinds of disease or infirmity, except that of drunkenness, dissipation or imprudence, and these are much fewer and less frequent than formerly.

The moral and physical condition of the men appears to have been vastly improved by the abolition of the whiskey part of the ration and the substitution of gin, sugar, coffee, etc., in its place. Sobriety, contentment, cleanliness, and good order now generally prevail where almost constant drunkenness, riots and mutinous conduct formerly abounded in the army. Officers now derive satisfaction and pleasure from their commands, and the soldiers willingly obey and eagerly perform their various duties with alacrity and delight.

The general health and moral conditions of the troops at the several posts within my observation are remarkably obvious, and the professional abilities, faithfulness and attention of the officers of the line, as well as the Medical Staff, are sufficiently evinced by the excellent policy, order, regularity and comfort in which they keep their respective Garrisons and Hospitals.

In this connection, though probably not belonging to this period, I wish to record some of his "suggestions for a plan and regulations of commercial hospitals," found in rough draft among his papers, and not dated. The ideas which he embodied here were easily a half century ahead of their time, and compare very favorably with modern ideas of industrial institutions:

That the plan be based upon the liberal, broad principles of general, just and equal beneficence and public charities set forth in the memorial and Report of the Committee.

That Ample appropriation be asked for and Secured to erect and endow suitable buildings at the points indicated in the report, and perhaps

other appropriate places higher up the Mississippi and lakes, especially G. B. and P. D. C., the natural intersecting points of water communication between the great Lakes, those inland seas of our country, and the long navigable Rivers of the west.

That the institution be placed under the general supervisory care and management of a commission appointed by the Pres. of the U. S., whose duty it should be to receive annual or semi-annual reports and returns from the subordinate branches, to devise ways and means, and make provision for the perpetuity and improvement of the institution.

That each respective Hospl. and subordinate branch have a board of commissioners or Trustees, appointed by the General commissioner, to superintend and direct and regulate the local branches; to appoint from time to time resident physicians and Surgeons, and medical and surgical Boards of consultation, purveyors or Stewards, and general superintendents and other necessary attendants for the admission of applicants, and for the regulation of imposters or unworthy invalids, etc., who may have gained admission by misrepresentation or from unavoidable suffering and immediate distress.

That the institution be founded upon a general manual labor and self-sustaining system.

That some place appropriate and, so far as practicably consistent with restoration of health and principles of humanity, useful exercise and labor be adopted and judiciously be carried into execution for the employment of such invalids and convalescents as may be capable of performing or even of learning.

That no indolent, unworthy, vicious vagrant or imposter be permitted to remain in the institution after the development of such traits of character.

That only just criterion and requisite qualifications for admission be the worthy indigent, inefficient sufferers from age, infirmities, or unavoidable misfortunes and accidental injuries.

That these tests and qualifications of applicants be ascertained and judged of, as far as practicable, by a committee of investigators appointed for that particular purpose, and that no worthy member be permitted to remain and partake of the munificence and charters of the institution after he shall have become physically able to leave it.

That the immediate and severe suffering from evident and unavoidable misfortune only can entitle an applicant of doubtful merits or of suspicious character to admittance at all, and then only till he shall have obtained relief from his immediate sufferings and inability. That the worthy old soldiers, inland sailors, invalids of the army, and craftsmen of the Western Lakes and Rivers, and transient sojourners be the special objects of the institution.

That ample, convenient and properly constructed Hospl. buildings be erected upon the most eligible salubrious and pleasant sites, and having attached to them sufficient quantity of good arable land for agricultural and horticultural purposes, with an appropriate supply of farming and

gardening utensils, tools for the different kinds of mechanic arts and the various implements of domestic manufactory.

That with a view not only to facilitate convalescence, and promote health and usefulness, but the better to obviate the debilitating and pernicious effects of indolence and idleness, to detect roguery and prevent vicious habits, than which nothing is more apt to occur in such [community], every invalid and convalescent should be required to perform such labor as his particular genius, former occupation and the state of his health may admit of.

The culture of the Mulberry tree, the nurture of the worms, and the making and manufacturing of the silk would not perhaps be unworthy a trial in such an institution where the climate would admit of it.

The foregoing suggestions, hereby thrown together upon a very cursory and partial view of the important subject to which they relate, are respectfully submitted for consideration.

A few days after his return from the tour of inspection, Beaumont made a short trip with Alexis, exhibiting him to medical societies in different cities. On May 15th Milo L. North and Edward P. Terry, of New Haven, sent, on behalf of the Connecticut Medical Convention, a resolution "that the thanks of the Convention be tendered to Dr. Beaumont for his interesting exhibition of the subject of his celebrated physiological experiments." Soon after this he exhibited him in Boston, and subsequently received a most enthusiastic letter from Dr. Charles T. Jackson.*

NO. 11 HANOVER ST.,
BOSTON, May 23, 1834.

To Dr. Beaumont.

DEAR SIR: Since you left Boston I have been almost continually employed in researches on the chemical composition and the Physiological properties of the Gastric fluid which you had the goodness to furnish me with during your short stay with us.

I have become deeply interested in these researches, and regret exceedingly that you could not remain in Boston long enough to witness them. I am sorry to state also that my stock of fluid is nearly exhausted, and my researches are yet by no means finished. I have ascertained the precise quantity of Muriatic acid and of mucus in the fluid, and have also found an animal matter somewhat like gelatine, but it does not possess all its properties—perhaps it is Osmazome, but I am not yet ready

*Charles T. Jackson was a scientist of considerable renown, who made valuable studies in chemistry, physics, and geology. He claimed to be the first, in 1832, to indicate the applicability of electricity to telegraphy, and from 1836 to 1839 he was state geologist for Massachusetts, Maine, and Rhode Island. His name is most often recalled today in connection with the acrimonious discussion concerning the discovery of ether as an anesthetic in 1842. He entered claims together with Horace Wells, Crawford W. Long, and W. T. G. Morton. Jackson ultimately relinquished his claims to the discovery in favor of Dr. Long, and in 1873 became insane, dying in an asylum.

to give a decisive opinion. I have obtained the acetic acid in a separate state, but have as yet not determined its precise quantity. I am now examining for Lactic acid, which I suspect exists in the fluid, but have not yet proved its presence to my own satisfaction. I am also searching for Hydrofluoric acid, which Berzelius says may possibly exist in the Gastric fluid, but the presence of which no one has yet ascertained. I have entirely satisfied myself respecting the power of the gastric fluid to digest food out of the Stomach, and have repeated all your experiments upon the chyme with bile which I took pains to obtain from the gall bladder of a child lately dead of *Pneumonia acuta*. The results were very like those related by yourself. I shall give you the details hereafter.

I am now going to neutralize exactly a portion of the fluid with carbonate of soda, and ascertain if, when neutralized, it still has digestive properties. I write you now especially to beg you to send me another portion of fluid—as much as you can obtain in three or four days—or, if possible, to come yourself to Boston and assist at the experiments. I think we could do something handsome in the way of Physiological researches if we had St. Martin here. I have spoken to several physicians upon the subject of your coming here, and they say that there would be no difficulty in getting up a subscription to support Alexis while experiments were making under your direction. Perhaps lectures might be given on the case, which would remunerate you for the trouble. For my own part, I am willing and should deem myself happy to perform any part of the labor you might assign to me. If you can, do endeavor to come and spend a few months with us. If you are not able to leave yourself, please send me all the Gastric juice you can obtain. It can be closely corked up in a stout green glass bottle, and sent with safety by some person coming to Boston or by the New York packets to Boston. When you send anything, please write at the same time by mail, giving me an acct. of the time at which the fluid was taken and how it was sent. Perhaps it will be less objectionable to pack up the fluid obtained at each trial in separate packages, each numbered and referred to in the letter relative to the time and under what circumstances it was taken. In this manner we may preserve separate the different specimens, and ascertain if any difference of Composition exists in the specimens. The phials might all be packed in a small box, and sent by packet or by private conveyance. Please write me soon as possible, and let me know what you intend to do. In haste, my Dear Sir,

I subscribe myself your friend and obt. servt.

CHARLES T. JACKSON.

In the meantime St. Martin had been permitted to return to Canada again to visit his family, with the promise, however, that he would meet Dr. Beaumont in Plattsburgh by June 15th, and go with him and his family to Jefferson Barracks, twelve miles south of St. Louis, the new post to which he had recently been ordered.

It was Beaumont's evident intention at this time to take his family with him to Jefferson Barracks, as is indicated by the following extract from a note written to his daughter Sarah from Washington on May 29th :

. . . Be a good child; learn your lessons; improve your mind in everything useful, virtuous and becoming. Finally, become an amiable Lady in your early youth. Remember, your Father's hopes and your mother's anticipations of future joy and satisfaction are upon the right cultivation of your mind and morals. Tell your cousin Elizabeth^o she may prepare to go with you to Jeffn. Barracks, and then continue to be your preceptress and my female protege till she can find a more agreeable protector. Improve every moment you have before you go in learning all you can at Plattsburgh. Prepare your little Library, maps, charts and all the little traveling paraphernalia you can collect, to amuse and instruct yourself and the children on our journey through the Lakes and Canals. Mr. Halsey will hand you this, and tell your Mother how I am, etc.

Kiss your Dear mother and the children affectionately for me, not forgetting Elizabeth and the rest of the family, and be assured of doting love and tenderest affections of a father, anxious for your health and happiness, and eager to be with you.

He seemed determined before leaving Washington to force the Government to take further recognition of his production, and at the same time to dispose of a large number of volumes that were left on his hands. With this in view, he sent two communications, one to the secretary of war and another to the secretary of the navy, dated June 2, 1834 :

To the Hon. Secretary of Navy.

Doctor Beaumont, U. S. A., having been at much labor and expense in performing and publishing a series of "experiments and observations on the Gastric juice and the physiology of Digestion," which he verily believes will be of much usefulness to the public service by conducing to promote the general health of community—the army in particular, if the work be supplied to it. And being conscious of the inadequacy of his individual means to sustain, without manifest injustice to himself and family, the expenses already incurred, or of further prosecuting the subject unaided by public patronage in some way, he very respectfully suggests the justice and propriety of, and earnestly requests, a purchase of 100 copies by the Navy Department for the use of that branch of the service.

It is conceived that they will be of much useful importance, not only to the sick and invalids at the Hospitals of our different military posts,

^o Elizabeth Smith, their niece, accompanied them to St. Louis, and lived with them until she married Morgan L. Martin, of Green Bay.

but also to the crews, messes, and individual families in their tendency to regulate wholesome rules of dieting upon the true principles of temperance, in both eating and drinking, so essential to the preservation of good health, constitutional firmness and moral rectitude. A notice of the decision, whether adverse or in favor of this proposal, communicated soon as practically convenient, will be very desirable, as Dr. Beaumont is under orders for Jeffn. Barracks, Mo., and expects to leave the City very soon, and would wish to make arrangements to furnish the books, should a purchase be decided upon. A note dropped into the postoffice within a day or two will be received before he leaves the city.

On the following day this reply was received from Secretary Levi Woodbury:

Your communication of yesterday is received, offering to this Department 100 copies of your work upon the gastric juice, etc. This Department has already taken 12 copies of your work to supply the different Hospitals and Yards. It has not been deemed expedient heretofore to buy Medical books for the different vessels in commission. But the subject will be taken into consideration, and, should it be deemed proper to change the practice on this point, I will be happy to inform you.

He now returned to Plattsburgh to meet Alexis and to take leave of his family, for in the meantime it had evidently been determined that his stay at Jefferson Barracks would be a short one. On his arrival at Plattsburgh he wrote Major Kirby, paymaster of the army, that he expected to leave on or before July 1st for his station "in the 'Valley of the Mississippi,' that happy abode of savages, aligators and Indian traders." "I hope," said he, "if the Deposits be not returned to Pres. Biddle's Bank,¹⁰ that some of them may be to my empty pockets. . . . Should you have received any Book-money, and know not what better use to put it to, you might remit it if convenient. My wife wants it for 'pin money.' "

He was much disappointed to find that not only had Alexis not arrived in Plattsburgh, but that he had sent no message of any kind as to his whereabouts or his intentions. He remained here a reasonable length of time, endeavoring to get into communication with Alexis, but without success. After considerable delay he was compelled to leave without him. His feelings are best expressed in his own words in an unofficial communication to the surgeon-general after reaching Jefferson Barracks:

A vexatious disappointment and an unexpected detention at Plattsburgh, awaiting Mons. Sergt. St. Martin's return to me at that place, pre-

¹⁰ The United States Bank; Nicholas Biddle, president.

vented my arrival here several weeks sooner, and now I have the mortification to report him absent without leave. . . . I arrived at Plattsburgh on the 15th or 16th of June, sanguinely expecting to meet Alexis there in readiness to go with me and remain with me, but, instead of his having returned as he promised, I could hear nothing from him, and was left in the predicament of 1825. I wrote to him and urged his immediate return, waited 10 or 15 days longer than I otherwise should have done, and, learning nothing from him, was obliged to come on without him. This placed me in a most unpleasant and vexatious predicament. I could not feel warranted in taking time to go after him. Not to regain control of or to leave him behind seemed like abandoning an important object, and sacrificing almost all that had been done. I was compelled, however, from a sense of public duty, to proceed without him, trusting to subsequent events and circumstances to retrieve the accident. A letter¹¹ forwarded per mail overtook me on my route containing an extract in Monsr. St. M's own language, and very expressive indeed of his assumed disposition, to wit:

"This 's just a snatch of Monsieur's ways,
Thus go's he on in *tricks* and *lies*,
And thinks to get well paid for it."

Here we have his true character. His object was to induce me to come into Canada after him, and, knowing my inability there to enforce the conditions of his [agreement] to any useful purpose, intended and expected to take advantage of my anxiety to extort a much higher salary. I know well his disposition and his ugliness, and hope rightly to [defeat] them. I have taken no notice of his communication, nor shall I make any demonstrations to get him again till I return in the fall (which I hope to be permitted to do without fail), by which time he will have spent all the money I advanced him to provide for his family for the year ensuing, become miserably poor and wretched, and be willing to recant his villainous obstinacy and ugliness, and then I shall be able to regain possession of him again, I have no doubt. Should it be decided by the Parisian comtee. to invite the case there, opportunity must be afforded and means used to regain control of him immediately before it be too late. I constantly fear he may lease himself to some of the medical men in Canada, and get his case into the hands of the English Doctors. You

¹¹ The following letter was received en route. Alexis could not write, and in his entire correspondence with Dr. Beaumont had others write his letters for him, and he would make his mark.

BERTHIER, 26th June, 1834.

DEAR SIR: My wife is not willing for me to go, for she thinks I can do a great deal better to stay at home, for on my farm she thinks will be a great deal more profit to me. I had started on the 18th of the month, and went as far as St. John's and fell sick. On account of that my wife is afraid to let me go. My wife joins me in love to you and your mistress, and all the family. Hoping this may find you all in good health. I hope you won't be angry with me, as I can do better at home. I am much obliged to you for what you have done, and, if it was in my power, I should [do] all I could for you with pleasure. You will be good enough to give my love to Mr. Green and his family. No more from

Yours,

ALEXIS ST. MARTIN.

can readily appreciate my anxiety and the deep interest I feel in the case. I hope to receive the earliest possible intelligence that may be communicated through Mr. Livingston, accompanied by your views on the subject. Should there be no call to *Europe*, I shall be extremely anxious to receive your suggested indulgence of going for my family in the fall and return to *Fort Crawford* for permanent station. My best wishes for the recovery of your health and kindest respects for Mrs. L. and family.

It is interesting to observe that the *official* report sent to the surgeon-general upon his arrival at Jefferson Barracks read:

SIR: I have the honor to report my arrival at this post on the 29th inst. Sickness on the way prevented my arrival a few days sooner.

When Dr. Charles T. Jackson learned that Beaumont was to be stationed in the West, and that St. Martin would no longer be accessible to him for further investigation and experimentation, he was evidently desirous of forestalling the move. With this in view, a petition was circulated among the members of Congress, to which more than two hundred of their signatures were appended, and was presented by Edward Everett to Secretary Lewis Cass just about the time Beaumont started for his new post. The petition was as follows:¹²

Being informed that Doctor Charles T. Jackson, an eminent chemist of Boston, is successfully prosecuting an analysis of the gastric fluid of Alexis Saint Martin, the Canadian boy attached to Doctor Beaumont, surgeon of the United States army, and that the analysis cannot be satisfactorily accomplished without the presence of Doctor Beaumont and Saint Martin; and regarding the case as furnishing a rare and fortunate opportunity of demonstrating important principles in physiology, by which credit may be conferred on the medical science of our country and important benefits accrue to humanity; also, understanding that several national scientific bodies are anxious to draw Saint Martin from this country for the purpose of prosecuting the investigations now making by one of our countrymen, who is in every way competent to the work; and persuaded that the opportunity now afforded, if neglected, will be lost to our country forever, we request that the Honorable Secretary of War will station Doctor Beaumont at Boston, or in the vicinity, for the term of four months, or longer if necessary for the object.

The secretary replied:

I should have considered it due to the very respectable signers of the recommendation to comply with their request in this instance, had I not

¹² "William Beaumont and his Work," by Victor C. Vaughan. (Physician and Surgeon, December, 1902, page 547.)

ascertained that another engagement had been made by the Surgeon-General, with the consent of Doctor Beaumont, which is more acceptable to him than the proposed measure of sending him to Boston. Before I received your letter he was on his route to Saint Louis, the place of his destination, and under these circumstances I trust that you will accord with me in opinion that it is not advisable to change his station at present.

Surgeon-General Lovell wrote on the back of this paper:

Doctor Beaumont already understands that he cannot conveniently be stationed at Boston; so he has stated that this application was made without his knowledge or desire. He has gone to his station without any desire to leave it at present.

While Dr. Jackson was, no doubt, actuated by proper motives in the matter, he was evidently led away by his enthusiasm. At any rate, it seems quite certain that he had not consulted Beaumont as to his wishes on the subject.

Dr. Beaumont did not find Jefferson Barracks entirely to his liking. He was sent there, it seems, to relieve one Dr. Foot, whose position from some cause or other had become peculiarly unpleasant. Whatever these conditions were, they seemed to render Beaumont's position similarly uncongenial.

He remained at the barracks, however, throughout the summer and fall of 1834, contenting himself as well as he could, separated, as he was, from his family, the pleasant and agreeable surroundings which he experienced in the East, and from Alexis, who for the past few years had been giving him so much food for thought.

It was about this time that a letter was received by Dr. Silliman from Berzelius, to whom a quantity of gastric juice had been sent, and from whom such splendid results were expected. Of all the investigators whom Dr. Beaumont had called to his assistance, none gave a more disappointing and resultless response than did Berzelius. More than a year had elapsed since the package of "magic fluid" was forwarded to him as the one man in all the world who would be capable of extracting from it all of its hidden secrets. So sanguine had Dr. Beaumont felt that something unusual would be forthcoming from the Swedish chemist, that he was almost tempted to delay the publication of his work until word could be received from him. The letter finally came, addressed to Professor Silliman, dated July 19, 1834:¹³

¹³ Afterward published in *Silliman's Journal of Science and Arts*, vol. XXVII, No. 2, January, 1835, pages 405-407, section 28.

MY DEAR SIR: I had the honor to receive some time since the present which you had the goodness to make me of three bottles [vials] filled with gastric juice, drawn from a man into whose stomach there was an aperture through the abdominal integuments.

I am very grateful for the confidence you have had in me in wishing to engage me in making an analysis of it, and I regret deeply that for the following reasons I am not able to answer your expectations.

First, the gastric juice, sent in April, did not arrive at Stockholm till towards the close of the month of August. It had not become at all putrescent, but how was it possible to be assured that the animal matters dissolved in it, after a separation of almost five months from the living body, and after an exposure to the elevated temperature of the months of July and August, were still identical with those of fresh gastric juice.

But this circumstance apart, I could not make this analysis with any hope of success. I assure you that I commenced, but the difficulties immediately arrested me. On testing the gastric juice with litmus paper, I found it strongly acid. The acids are for the most part volatile. To obtain them, recourse must be had to distillation, but the operation of boiling would change the animal substance in the residuum. The quantity of gastric juice being only 266.76 grammes, I felt that I ought to sacrifice none of it, and therefore, in removing the volatile acids, I evaporated the whole in a vacuum at the temperature of the room. I had a residuum of 3.385 grams, filled with crystals of chloride of sodium.

Now, it was necessary to make a plan of the analysis, but how could I make a plan, the nature of the substance to be separated being unknown? A single mistake in the plan would destroy the whole, and I had no more of the matter to recommence.

On recalling to myself how many times I have been obliged to recommence the analysis of blood, bile, and urine, etc., because I found it necessary, time and again, to alter the plan, it was evident that I could not now attain the object with the gastric juice, of which I possessed only $3\frac{1}{2}$ grammes of dry residuum. I have, therefore, put alcohol, sp. gr. 0.833, upon it and enclosed it in a vial well stopped, where it waits whatever may happen.

A great number of experiments, chemical and physiological, ought to precede the analysis. These experiments would demand almost daily to renew the supply of gastric juice—e. g., 'tis said the gastric juice dissolves the aliments swallowed, but what is this solution? Does it not consist in this, that certain parts are dissolved entirely, and that others, insoluble, but in a very divided state, are diluted in the form of a thick bouilli? What are the substances dissolved, and what the part insoluble, but diluted? The fibrine of the muscle is very soluble, even out of the stomach in very diluted acids. I inquire next, is it by the free acids of the gastric juice that this solution is made in the stomach?

Would gastric juice, rendered perfectly neutral, lose the power of dissolving muscular fibre? If not, it must contain another substance, which is the true menstruum. This substance ought to be isolated and

studied apart before we could have any means of determining its quantity. This we could not do without being able often to renew the experiments with fresh gastric juice. It would be necessary even to examine with the fresh gastric juice the most of the aliments which the man used, each by itself, and, by proceeding thus, we should obtain probably some sure and numerous data that would give a glimpse of what should be sought in the analysis, for that which is unsought is rarely found. You see, then, my dear Sir, how much previous knowledge I need for entering upon this analysis with hope of success.

I request you to make the proper explanation and apology to Dr. Beaumont.

Compared with the results obtained by the American chemists, this reply was most disappointing, and undeserving of the great importance that was laid upon it.

On September 4th information came that the complications at Jefferson Barracks would be relieved by assigning Surgeon Foot to Fort Winnebago and Dr. Beaumont to Fort Crawford as soon as another surgeon could be assigned to this post. Though the transfer was promised by November, Dr. Beaumont was becoming very impatient, and immediately on the receipt of this notification sent a formal, official request for a leave of absence for the purpose of going to the North for his family, in order to return to his permanent post of duty as soon as practicable. This official request was accompanied, as usual, by one of an unofficial character. He had been living in hopes that Mr. Livingston would succeed in making arrangements to have him come to Paris with Alexis, and that by the time he had completed his temporary service he could proceed abroad with Alexis. He said:

Having received no information relative to the suggestion of going to Paris with Mons. Alexis, and, from the length of time elapsed, believing nothing more will be done about it, I enclose a formal and offl. appln. for leave of absence to go for my family in the fall, and, if no other arrangement can be made by which the objects contemplated at the time I last saw and conversed with you on the subject [can be realized], I wish to be permitted to avail myself of the indulgence soon as possible. I should prefer an order, however, to some other post. If no farther general or public measures are likely to be taken to aid in prosecuting the expts., and I am to be left to my own individual resources for further investigation of the subject, I wish to be assigned to some post more convenient than this, where I intend to take with me the subject, Mons. St. M., and such other means as I can command, and continue to prosecute the expts. and observations, etc., to the best of my limited ability, and communicate the result to the public in such manner as may be deemed most advisable.

If I were not fearful of obtruding too much upon your patience, or that you would demur having anything more to do with it, I would most earnestly and sincerely desire your further advice and assistance in the proper course of proceeding. Vexed and perplexed, as I am sensible you have been more or less from the commencement, but knowing the kindness of your disposition and liberality of your views, I will presume, however, respectfully to request a frank and free comm. from you on the subject.

I have not much doubt of obtaining control of Mons. Alexis again this fall if I be permitted time and the opportunity. The pecuniary sacrifices I have already made in bringing the case before the public are all well known to you, as well as to the other Heads of the Depts. Can it not be made consistent to procure an order that would in some way aid in lightening the expenses of another trip from Missi. in the performance of a duty as much and more for the public than private benefit? Forgive the suggestion if it be improper; you know my views, and will, no doubt, rightly appreciate my motives. . . .

My preference of Posts is already before you. Ft. Crawford is still my first choice. I wish to be assigned to that station unless Ft. Columbus, N. Yk., is to become a Station for a Surgeon, in which event I would prefer that, as I have before indicated in recording my selections on the book in your office. I hope you will candidly and kindly appreciate the peculiar situation in which I am placed relative to my public and private duties, and duly consider the circumstances in which I am involved in relation to the Expts., Book, Alexis, etc., and favor my particular views and interest so far as consistently practicable without undue prejudice to the public service.

In due time the order came, and the early part of November found him wending his way to Washington and Plattsburgh on a three-months' leave of absence. Within an hour after his arrival at Washington he wrote his wife in his characteristic style a description of the country through which he had just passed.

WASHINGTON, D. C., Sat. Eve., Nov. 15, 1834.

I wrote you last, my dear Deborah, from Louisville, Ky. From there I proceeded to Cincinnati, Portsmouth and as high up the Ohio as Guyandotte, where the water was so low the boat could go no farther, and we were obliged to leave and take the stage over the Alleghany mountains through the state of Virginia. This, however, has prolonged my journey but a day or two, and has afforded me a fine opportunity of seeing an interesting and very romantic part of the United States that I have never before seen.

In taking this route, I have traversed the most celebrated parts of the State, passing almost over the very tops of the mountains, and by the White Sulphur Spring, the Hot Springs, the warm Springs and the Burning Spring, as famed in that State, and indeed they are great curiosities.

I have continued in company with Genl. Ashely and family all the way. We were two whole days and part of the nights in traversing the mountains. We passed over the highest peaks, 2500 feet above the valleys, before daylight and 3 o'clock on clear, serene morning. It was verily the most sublime and beautiful scene I ever witnessed. The stars shone unusually bright, and we were in the very neighborhood of them. I could almost catch the falling meteors by their tails as they dropt around us, and felt their scintillations as they passed. If I had had a good pair of ears, I am sure I should have heard Old Mars and Bellona holding their matin converse, and Venus giving lessons to a class of young cupids how to point and direct their arrows. From these heights we would suddenly descend into the deep, dark dales below, where burns the blue sulphurous gass or boils the Brimstone Springs, both hot and cold. This is no fiction—it is a fact, and, if anything on earth resembles Hell, it is these Springs. What is called the “burning Spring” is sulphurous gas or vapor, emitted from a slight excavation in a sandy soil through the pores of the earth, and, when a piece of fire or lighted torch is touched to the surface, it burns from a thousand points precisely like sulphur matches or melted brimstone, and continues till extinguished by throwing on water. The White Sulphur Spring boils up from the earth in a large fountain of perfectly clear water, with a very strong sulphur smell and taste. The Hot and warm Springs also boil up in the same way, differing in degrees of heat—one is about blood warm and the other quite hot. They are not all in the same neighborhood, but some 8 or 10 miles apart.

We also passed through Charlottesville, where is founded Mr. Jefferson's College, “The University of Virginia.” I had the honor of being respectfully noticed by the medical Professors, and passed in review the celebrated dwelling place and sculpture of the Immortal Jefferson, Monticello. Passed to the banks of the Potomac, and there viewed “Mount Vernon,” that sacred spot where dwelt and died and now rests the dust of the “Father of our happy country.”

These are richly worth seeing, and my only regret is that I had you not with me to enhance the delights of the very interesting scenes through which I have just passed. Oh! how much you would have enjoyed it with our dear children with us!

The enclosed are leaves from a fresh rose I plucked from a bush as I passed this sacred spot, growing fresh in the open garden. I have also an unexpanded bud that I am going to try to preserve and bring you. The season is most delightful and pleasant in this latitude. Vegetation is yet fresh in the fields. A more delightful time could not have been enjoyed than we have had since we left St. Louis. Scarce an hour of foul weather have we had in the whole route till this afternoon, when it began to storm, and it is now raging furiously, but not till after our arrival here. We have had excellent roads, fine horses, elegant carriages, and good drivers, and have enjoyed fine health so far and hope to till after we meet. I arrived here an hour ago, and have not seen Dr. Lovell yet to ascertain my prospects. And tomorrow being Sunday, I fear I shall be

detained till Tuesday before I can get away. I send this in advance to appease your anxiety and prepare for the reception of Your ever affectionate

WILLIAM.

Following his consultation with the surgeon-general at Washington, he spent the greater part of his leave of absence with his family in Plattsburgh. Whatever the determining factors in their discussion of the matter, it was decided that Beaumont should return to St. Louis at the expiration of his leave of absence, to be stationed at the arsenal instead of the barracks, and that this should be his permanent station. He left Plattsburgh about January 10th or 12th en route for St. Louis, with the understanding that he was to return in April for his family. There is evidence that he spent the 14th at Philadelphia. It goes without saying that while in Plattsburgh further efforts were made to get Alexis to join him. He could get no reply to his letters, however, before leaving, and authorized his cousin, Samuel Beaumont, to continue the correspondence. Samuel Beaumont wrote Alexis of Dr. Beaumont's great disappointment, adding:

He left word that if you answered his letter, and concluded to abide by his proposals of leaving your family there for the present and come out yourself and go with him, to write back to you and say that you might stay with your family till about the middle of April, and then meet him here, prepared to go with him. And he also said, if you refused to come without your family, or asked for more money than he had already advanced or consented to let you have when you came to him, that you might remain where you were, without expectation of any further assistance or consideration from him, enjoying the fruits of ingratitude and injustice as you could. He will not advance you any more money till you come to him, and manifest a sincere disposition faithfully to serve out your engagement to him and fulfill his expectations of you. When you have done that, he will reward you justly, amply and equal to your expectations.

To cover the distance between Plattsburgh and St. Louis at that time required a period of two weeks. Dr. Beaumont therefore returned to his post of duty about February 1st, and on March 18th notified the department at Washington that he was about to return to Plattsburgh via Washington for his family. He arrived there early in April, and began preparations for removing his family to their permanent home in St. Louis. It will be remembered that since leaving Fort Crawford in 1832 he had not been in any one

location long enough to justify his having the family join him. The anticipation, therefore, of once more having his loved ones about him, with a home of his own, must have been a source of the greatest satisfaction to him. Could he but bring Alexis once more into his family group, his happiness would be complete. This visit to Plattsburgh, like the preceding ones, was characterized by efforts in this direction—this time through Mr. William Morrison,¹⁴ with whom he had previously been in correspondence. After making apologies for trespassing again upon his time and patience, he wrote :

. . . But from the peculiar circumstances and situation in which I am placed with regard to him and his case and condition, I am induced to do so from a desire, in the first place, to ascertain facts, that I may be able to do justice to him as well as to myself; and 2dly, to avoid unnecessary disappointment either to the public or to individuals. From the suggestion in your reply to my letter on the subject last fall, and also from a commn. from Alexis himself, I was then induced to believe he would, like an honest man, have returned to me to fulfill his engagement this Spring. I have heard nothing from him since. I have now just returned from St. Louis, Mo., where I have been since Decr. last, and expect to return there again in a few weeks, permanently to remain. But before I finally abandon the idea of realizing and regaining him again into my Service, I am desirous of ascertaining Alexis' situation and true disposition, and can only expect to succeed indirectly through your kindness and candor. Long, vexatious experience has too much impaired my confidence in him to rely upon his assertions and promise. I am sorry it is so, but so it is, and it is now almost a year since, by mutual understanding and agreement, I advanced him money, considerably more than was then due him, to enable him to take his family into Canada, and leave them comfortably situated for 18 or 25 mos., to return himself in 5 or 6, to meet me at Plattsburgh to go West and serve out his engagement to me, since which I have not seen or recd. anything from him but mere pretexts for his failure to return according to agreement. I made my final proposition to him last winter, just before I started for Missouri, by which I am still willing to abide if he chooses to comply without any more cavil or delay. I expect to leave here with my family for the West on or before the 10th of May.

Will you do me a last favor, if you can endure the disagreeable condescension of seeing Alexis, to ascertain his situation, disposition and determinations, if practicable, and communicate them, with your own views and opinions on the subject, to me at this place soon as possibly con-

¹⁴ William Morrison, an agent of the American Fur Company, residing in Canada, had been a well-known figure in the history of the company for many years. As early as 1808 he was one of the partners of the "shrewd Lisa" in the Missouri Fur Company. He was now living on a small estate in Canada.

venient. I would not have troubled you again on the disagreeable subject, had not expediency as well as the necessity of the case required it.

Another matter which called for his attention prior to leaving for the West was some misunderstanding existing between him and his publishers. It seems that there had been some delay in the payment of the royalty or commission on the last five hundred copies of his work. He therefore, before leaving, gave Samuel Beaumont power of attorney, authorizing him "to ask, demand, sue for, recover and receive from Lilly, Wait and Co., now or late Booksellers of Boston, in the state of Massachusetts, or either of them, such sum or sums of money as are now due from them, the said Lilly, Wait and Co., or the balance due from them for or on account of five hundred copies of a book entitled, 'Experiments and Observations on the Gastric Juice and the Physiology of Digestion.' "

No record was found as to whether an amicable settlement, or any settlement, was made with his booksellers.

CHAPTER XI.

1835-1840.

All arrangements made and his affairs satisfactorily disposed of, he started with his family through the canals and lakes on practically the same journey that he described so vividly in his "Travelling Journal from Plattsburgh to Mackinac in 1820." It was his intention to proceed overland from Green Bay to Prairie du Chien, and down the Mississippi to his destination. On June 26th, however, he reported himself sick at Green Bay, and asked for an extension of his furlough. They were not detained long, for on July 23d he reported to the surgeon-general's office his safe arrival at St. Louis in good health, and on August 1st that they were comfortably situated at the arsenal, three miles south of St. Louis. Here he lived with his family for a short time, after which he moved into the city, and requested of the surgeon-general the privilege of entering private practice in St. Louis and community. According to a notification which he had received in April, his duties were to be divided between St. Louis, where there were many officers and their families, and the arsenal, where he was the attending physician and the purveyor of medical supplies of the western military district. Dr. DeCamp was now stationed at the barracks, where there was at that time a small number of men under General Atkinson. He felt therefore that, since much of his time must be spent in the city, he could open an office and give medical attention to citizens as well as soldiers. He had been granted the same privilege at other posts without it having in the least degree interfered with his official functions, and the request was promptly granted on this occasion. Coming, as he did, with his well-established reputation as army surgeon, and with the prestige given him through the publication of his book, together with a strong personality and splendid presence, private practice fell into his hands very quickly. The officers and their families played an important role in the social affairs of St. Louis in these days, and his introduction was therefore prompt and complete.

In spite of the busy life he was leading and a rapidly growing income, he still had time and inclination to carry out the suggestion of Mr. Everett following the sad fate in Congress of his amendment

to the appropriation bill of 1834—namely, that he present a new memorial to Congress, asking for compensation for the services that he had rendered Alexis, but not proposing an appropriation for the continuance of the experiments. When, therefore, the Twenty-fourth Congress convened in the fall, an amended memorial was presented. The following extracts from the Senate journal¹ speak for themselves:

(December 28, 1835.) Mr. Linn (senator from Missouri) presented the petition of William Beaumont, M. D., praying to be remunerated for his time and expenses in prosecuting a series of experiments on the gastric fluid on the person of Alexis St. Martin.

(December 31, 1835.) On motion of Mr. Wright (Silas Wright, Jr., senator from New York), member of Committee on Finance, ordered that the Committee on Finance be discharged from the further consideration of the petition of Dr. William Beaumont, and that it be referred to the select committee appointed on the petition of Boyd Reilly.

Boyd Reilly, the inventor of an apparatus for applying vapors to the surface of the body, was evidently endeavoring to have his appliance introduced into the army. While Beaumont was in New York conducting his experiments he received a request from the surgeon-general to purchase one of the "patent vapor baths" of Reilly, at which time it was evidently being tested by the department. Reference to the Senate journal concerning the petition of Boyd Reilly reveals the following information:

(December 28, 1835.) Resolved, that the petition of Boyd Reilly, inventor of the apparatus for applying air, gas or vapor to the surface of the human body, which was presented to the Senate at the last session, be referred to the select committee. Ordered, that Mr. Naudein, Kent, Linn, Grundy, and Robinson be the committee.

(January 27, 1836.) Mr. Naudein made a report from the select committee on Boyd Reilly [but no mention of Beaumont's petition].

Bill to purchase apparatus sent to engrossment and third reading.

(March 31, 1836.) Passed the Senate.

In other words, Beaumont's memorial was "pigeonholed," and has never been heard of from that day to this. The probabilities are that by this time Dr. Beaumont's opinion of Congress was entirely in accord with that of his cousin, Andrew Beaumont, himself a member of Congress from Pennsylvania.² Andrew was

¹ Senate journal, first session, Twenty-fourth Congress, 1835, pages 61, 72, 123, 250, 253.

² From 1833 to 1837.

evidently a very clever fellow, and certainly a wit if one may judge from those of his letters that it has been my pleasure to peruse. He wrote:

I get so out of all patience with the damnable morals of men in the high stations (always excepting Andrew Jackson), of the reckless knavery and gambling profligacy of a majority of the people's representatives, that I have hard work to stand it. Why, damn it, many things done here in the House of the people, under the pretense of legislating for the common welfare, would disgrace in profligacy a band of your real Mississippi Blacklegs. Oh! I forgot you lived upon the banks of the Father of Rivers. I beg your pardon. But, to leave the Mississippi Blacklegs to attend to Washington Blacklegs, these worthies rob and skin the people by millions over millions, and then tell them—and too many are fools enough to believe it—"that it is all for protection!" . . .

I hope you are happily located with the wife, when, after all your labors by land and water, you can sit down in peace and comfort, surrounded by all which makes life tolerable. It is, you know, a poor story at best, and, without those endearments of those we love and know to be our bosom friends, is cheerless indeed. I don't know how we muster courage and fortitude to endure life so long as we do, but "hope," whose ray pierces the most sullen gloom, shines always lovely, and lures us on thro many a melancholy path. You will say I am hypochondriac, but these are the reflections of Sunshine as well as clouds, and I appeal, Dear Cousin, to your own heart if there is not more truth than poetry in this half comic, half tragic reflection.

"Washington blacklegs" doubtless gave Dr. Beaumont very little concern after this, for his position was at last such that he was no longer dependent on the meager pay of an army officer, or the inconsistencies of a lot of politicians, who could squander thousands for political gain and had not a dollar to spend for the promotion of science. Dr. Beaumont's pride was probably the greatest sufferer in the matter, for he evidently did not mind so much losing the money as losing the fight. As to his cousin's "half comic and half tragic reflections," the probabilities are that he took no stock in them.

Within a year after he entered private practice he stated in a letter to the surgeon-general:

I have no wish or intention of resigning at present, though the professional encouragements I meet with here might seem sufficient inducement to do so, were avarice and professional fame the object of my ambition. I have a very handsome, lucrative and respectable private practice, with 6 or 8,000 dollars a year, a reputation far above my deserts, and

a professional popularity more than commensurate with my best practical skill or abilities.

The doctor's professional standing among laymen is best evidenced by the fact that within a year after opening his office he had a very large and lucrative practice; his standing in the profession was shown not only by a large consultation practice, but also by the action taken about this time offering him the chair of surgery in the first medical department established west of the Mississippi. Within a year of his settlement in St. Louis a correspondence, originating in the action of the Medical Society of Missouri, was carried on between a committee of the society and the president of the St. Louis University relative to the establishment of a medical department in St. Louis under the charter of the university. Full power had been granted to the institution to establish law and medical departments, which, by the charter, were to be in operation within a given period from the date of the privilege conferred.³ It was decided then to establish a school of medicine in St. Louis, and trustees were named.⁴ This board immediately proceeded to fill the different chairs in the medical faculty, and selected six physicians: Drs. Hardage Lane, Joseph Johnson, E. H. McCabe, Henry King, C. J. Carpenter, and Dr. Beaumont, to whom was offered the chair of surgery. He was duly notified by William G. Elliott, Jr.,⁵ secretary of the Board of Trustees, of his election on October 4th, 1836, but promptly replied:

Highly gratified by the purport of your note of the 4th inst., advising me of my election to the chair of surgery in the Medical Department of the St. Louis University, I regret the more that it will not be consistent with my present circumstances and official connection with the U. S. service to accept the appointment without first having consulted and ob-

³"Memoir of the Late Wm. Beaumont, M. D.," delivered before the St. Louis Medical Society in 1854 by Thomas Reyburn, M. D. (*St. Louis Medical and Surgical Journal*, vol. XII, March, 1854, and Minutes of the St. Louis Medical Society.)

⁴General Wm. H. Ashley, Rev. William G. Elliott, Dr. B. G. Farrar, Thomas Green, Henry L. Hoffman, John W. Johnson, Judge Mary P. Leduc, Colonel John O'Fallon, William Renshaw.

⁵Rev. William Greenleaf Elliott, D. D., came to St. Louis when the city was a mere village, and ever manifested a great interest in its growth, being especially devoted to the development of the educational institutions of the city. He remained a member of the Board of Trustees of the St. Louis University for a number of years. On February 22, 1853, the Legislature of Missouri granted a charter to an educational institution, to be located in St. Louis and to bear the name of Elliott Institute in his honor. In deference to his wishes, however, the name was changed to Washington Institute, and finally to Washington University. He was president of the first Board of Directors, and at various times acting professor of ethical and political science and political economy. In 1872 he was elected chancellor, which position he held until his death in 1887. He was connected for thirty-five years with Washington University, devoting the last fifteen years exclusively to the institution.

tained the consent of the head of my official department, Dr. Lovell, Surgeon-General, residing at Washington City.

Presuming that prompt action and immediate prosecution of the preliminary arrangements of this incipient institution are intended by the Trustees, and not wishing to cause any impediment to the speedy confirmation of their views, or to mar their future prosperity by any unfavorable delay in the matter, I feel in duty, as well as by conditions, bound respectfully to request the kind acceptance of my declination of the honor for the reasons above assigned. Permit me here sincerely to return thanks to the Board for the [compliment] in the proffered honor, and also express my profound respect and ardent wish for the success and prosperity of the contemplated undertaking.

Through Dr. Elliott the Board of Trustees expressed its regret that circumstances made it impossible for him to definitely accept the chair, and at the same time expressed the hope that the reasons were such as might be removed by a few weeks' delay. They were desirous that the medical department should have in its infancy the benefit of his influence and talents, and expressed, therefore, their willingness to wait for a definite answer until he could communicate with the surgeon-general. In view of the persistence of the Board of Trustees, the Doctor sent a communication to the surgeon-general on October 31, 1836,⁶ as follows:

Having recently been elected to the Chair of Surgery in the new medical school about to be established in this place, as you will perceive by the enclosed copies of communications, I conceive it my duty to consult the Department, and obtain your views and opinion of the propriety of such a course before giving a definite answer to the proposition.

Feeling great diffidence in my own qualifications and fitness for such an appointment, I was more inclined to seek an excuse than to cherish the acceptance, and urged my official connection with the Army, the uncertainty of my continued location here, and the necessity and doubts of obtaining the sanction of the Department and your approbation of such an engagement as sufficient objections, and gave them as my reasons for declining the proffered honor in the first place. But the Board of Trustees, not inclined, it seems, to let me off so easily, proposed to wait till I should have time to consult and obtain your views and decision on the subject before they proceed to elect another person.

I now submit the case for your consideration, and very respectfully and earnestly solicit your advice on the subject, either officially or privately, as you may deem most proper, and as soon as convenient. I should prefer, in your reply, a good excuse for non-acceptance.

⁶ This is a good example of the slowness with which news traveled in those days. The surgeon-general had died on October 18, 1836, yet in eighteen days the information had not reached an important army post less than half way across the continent.

After waiting three and a half months for a reply from the department, he finally conveyed his provisional acceptance of the chair of surgery to the secretary of the board:

I have consented to accept for the time being the proffered "Chair of Surgery" in the Medical Department of the St. Louis University, with the privilege of withdrawing from the said professorship at any time, should the heads of the Public Departments under which I am officially placed here withhold their consent or disapprove the act, and from which Departments I have not yet received any reply to a communication made on the subject some months since, owing, I doubt not, to the extreme illness and death of the Surgeon-General about the time it reached Washington, and his successor not having yet assumed the duties of that office sufficiently to attend to it.

For some reason the plans of the university did not materialize in the autumn of 1837—in fact, not for several years thereafter (1842). It may be stated here that there is no evidence that Dr. Beaumont ever delivered any lectures after the medical department opened its doors, though he promised to deliver a single course of lectures on digestion in 1851, providing he could succeed in procuring Alexis.

He was still in active correspondence with his friends in the North with reference to St. Martin. In April of this year (1837) Mr. Morrison had written from Berthier that he had just seen Alexis, that he was living about fifteen miles from Berthier, and that he was ready and "willing to leave at a moment's warning upon condition that his family goes with him." Mr. H. L. Dousman, also an officer of the American Fur Company, wrote at this time a very friendly letter to the Doctor, in which he added:

. . . Now for your Patent Digester, Mons. Alexis. We brot up Men enough from Montreal last Spring to answer us for two years; consequently we have ordered none for next season, but the company will probably send some up for the Lake Superior traders, as they do every year. They are sent via the Grand River to Sault de St. Marie, in which case Alexis could come up with them to that place and then via Mackinac and Chicago to your place. You must write immediately to Mr. Crooks at N. York, and state to him all the circumstances and your wishes, and I know he will do all in his power for you promptly, and, if they send up men, he will order Alexis to be sent with them. Write to Mr. Morrison also, and I know he will interest himself to see that Alexis is sent off at the proper time. I shall mention to Mr. Crooks in my next letter that he will confer a very particular favor on me by immediately attending to your wishes. . . . Perhaps Mr. Crooks could find means to have

Alexis brot via Lake Champlain to Albany, thence to Buffalo and Chicago. I think you had better suggest to him, in case they send men up, via the Grand River. I do not believe it will be much more expensive, and it will certainly be more expeditious, as he can reach you in about a month from Canada that way. . . .

He was spurred on to still further efforts to obtain his "patent digester" through a letter received from the American Physiological Society, making inquiries concerning Alexis and the possibility of having him come to Boston for experimentation. In replying to this communication, Dr. Beaumont wrote:

I have to express my gratification for your generous applause of my efforts to improve, perhaps, the unparalleled and only opportunity for a correct investigation of the physiology of digestion, and to say to you that St. Martin, if not on his way to join me at this place for the purpose of renewing, continuing and revising the experiments already begun, is in Lower Canada, somewhere between Montreal and Quebec. He is engaged to me, and has been under contract for two or three years past, for the express purpose suggested above, but has been prevented from surrendering himself to me, partly from the situation of his family and its affairs, but more perhaps from the natural obstinacy of his disposition and unwillingness to submit himself for public experiments, and obstinacy and unwillingness most pertinaciously persisted in from the beginning, and particularly embarrassing and vexatious to me through all my former experiments. He has recently written, however, that he is now ready, and wishes to return to me; and I have made arrangements to get him on here with his family, and hope soon to see him.

He has always refused and positively declared that he would never submit to be experimented upon by any other person or persons than myself, and has ever declined all offers and inducements from individuals and societies to engage to them for that purpose. I presume no consideration whatever would induce him to engage himself to the American Physiological Society, or any other society, for the purpose of experimentation without my personal attention and direction. He is capriciously and foolishly obstinate in that respect, and has always been. It has ever been my wish and effort to place him in some scientific physiological institution, where greater and more extensive justice might be done the subject of experimenting upon him than has ever been in my power to do, but he has ever and determinedly refused his assent to such an arrangement. My present intention is to get him with me again, commence a new series of experiments under the most favorable auspices practicable in this country, associated, as I intend to be, with some of the best physiological societies and scientific men of the West, and prosecute the experimental investigation to the best advantage practicable till circumstances will allow me to take him to some of the European Physiological Schools for the greater improvement of medical science. Duly

appreciating the importance of the subject and the occasion, I perfectly coincide with you and your society in the opinion that facilities it affords for so useful physiological investigations ought not to be lost sight of nor neglected.

Not long after this a letter written in excellent style and handwriting, to which was affixed Alexis' mark, was received :

I have received a letter a few months ago from a Mr. David Campbell, corresponding secretary of the American Physiological Society, of the city of Boston, in Massachusetts, offering to engage me for a term of three or six months, to be placed under the direction of an eminent physician for the purpose of experiments on digestion similar to those you have made. I have not given an answer yet, determined that I am not to accept the offer without your approbation and consent. I have made several inquiries concerning your place of residence, but without having learnt anything satisfactory. I now venture to direct this letter to Mr. Thomas Green, at Plattsburgh, in hopes he will have the kindness to forward it to you. I would wish to know if you would have me to go to you, or if you would approve of my accepting the offer made me. Should you desire me to join you with my family, I am ready at any time to go with you on such terms as you may fix yourself.

Fearing Alexis might fall into the hands of other investigators, the Doctor determined to follow the suggestion of Mr. Dousman, and applied to Mr. Crooks again to use his influence and facilities to bring him back :

. . . I should much prefer to have him without his family, if I can; but with it, if I must. To have him again has become almost indispensably necessary to answer the reiterated demands of foreign journals and institutions for further investigations of the gastric functions, etc. He engaged in 1834 for two years to come with me to this place, but it became necessary, in order to get rid of the incumbrance of his family and leave them comfortably situated with their friends in Canada, to advance \$80 or \$100. . . . But he disappointed both me and the public by concluding to stay with his family in Canada, where he has remained ever since. I should like to have him fulfil his agreement first, if he will; if not, to engage him on the best terms practicable, to be brought on with the voyageurs for your trade and transferred to me when he arrives in this country, as was done in 1828. He will doubtless need some advances to enable him to start, but he must not have any before his forthcoming be secured; if he do, he may play the same trick he did last—refuse to come after all. I hereby authorize any reasonable sum necessary to the comfortable leaving of his family there, or conveniently bringing them on with him here, at your discretion, the which shall be refunded at sight. . . .

In due time Mr. Crooks replied:

He can be had by advancing him probably \$150 to get him clear of Lower Canada, and pay the traveling expenses of himself and family to St. Louis. His wife will not allow him to go alone, and in that event he must come round the lakes to Cleveland or Chicago and then to St. Louis. There is some risk in this, but you must incur the hazard if you wish to have the man. I would have sent him by the Grand River in our canoe to Sault St. Marie next month, had he been alone, but it cannot be done with his family. . . .

Simultaneously a letter came from Mr. Morrison, informing him that the St. Martins lost their son, Alexis, Jr., and that there were three children remaining; that the entire family was destitute of clothing, and Alexis had fallen into dissolute and dissipated habits; that he could not be trusted with money, but would squander it promptly if given to him in advance. In view of all these discouraging reports, together with the fact that Alexis seemed determined not to go without his family, Dr. Beaumont discontinued his efforts for a period of two or three years, with the hope that an opportunity would present itself to send some one after Alexis or to go himself.

In the meantime Sir Andrew Combe,⁷ an eminent English physiologist, was not content with the excellent references that he had made to Beaumont's observations in his work on dietetics,⁸ but published an English edition of the work in April, 1838.⁹ In his preface he presents the most impartial estimate of the value of Beaumont's contributions to science that I have yet seen. At the same time, however, it may be considered a fair summary of the opinions voiced by his impartial contemporaries in general, as well as by those who in after years have endeavored to do Beaumont justice. I feel, therefore, that I can do no better in giving an esti-

⁷ Sir Andrew Combe was one of those unusual characters who, in spite of the great odds against which he fought, left his mark on the pages of medical science. During twenty-seven years of his life he was simultaneously making the fight against tuberculosis and adding valuable contributions to science. He was one of seventeen children and of poor parentage, and his ailment was attributed to conditions surrounding his home—offensive pools and ditches, defective ventilation, small and overcrowded rooms, unsuitable food, and inadequate clothing. He learned medicine as an apprentice in England, afterward studying in Paris. In spite of the constant strain under which he labored, he made valuable researches in physiology and phrenology, contributing not less than eighty articles on various phrenological subjects during his lifetime. He visited his brother in America in 1847, hoping to be benefited by the trip. (*Memoir of the Life and Writings of the Late Dr. Andrew Combe.*)

⁸ "The Physiology of Digestion Considered in Relation to the Principles of Dietetics," second edition; Edinburgh, 1837.

⁹ "Experiments and Observations on the Gastric Juice and the Physiology of Digestion," by Wm. Beaumont, M. D., of the United States Army; reprinted, with notes by Andrew Combe, M. D.; 1 vol., post 8vo.; Edinburgh, 1838.

mate of his work than to present, in part, the remarks of Sir Andrew Combe in his preface to the English edition of Beaumont's book:

The reasons which have induced me to reprint the present work from the American original are, first, a strong sense of its inherent importance, and of the numerous applications which may be made of the facts and principles developed in it to the prevention and cure of disease; secondly, its comparative inaccessibility to the European physiologist from the difficulty which still exists of procuring it on this side of the Atlantic; and, lastly, an earnest desire that the author should obtain that credit which is unquestionably due to his disinterested and indefatigable labors. The value of Dr. Beaumont's experiments consists partly in the admirable opportunities for observation which he enjoyed, and partly in the candid and truth-seeking spirit in which all his inquiries seem to have been conducted.

So far, then, as opportunity for observation was concerned, nothing could surpass that enjoyed by Dr. Beaumont. That Dr. Beaumont eagerly and zealously availed himself of his unusual advantages, the following pages furnish ample evidence, and it would, I think, be difficult to point out any observer who excels him in devotion to truth and freedom from the trammels of theory and prejudice. Among the disciplined physiologists of Europe a more systematic experimenter might certainly have been found, but in Dr. Beaumont's instance the absence of systematized inquiry—made too generally in support of preconceived theory, and therefore apt to mislead as well as instruct—is more than compensated by the implicit reliance which one feels can be placed on the accuracy and candor of his statements. Having no theory to support, and no favorite point to establish, Dr. Beaumont tells plainly what he saw, and leaves every one to draw his own inferences; or, where he lays down conclusions, he does so with a degree of modesty and fairness of which few perhaps in his circumstances would have been capable. . . .

But it may be said, singularly favorable as Dr. Beaumont's opportunities were, he has made no original discovery in the physiology of digestion. To a certain extent this is true, for, in the proper sense of the word, he has not made and does not claim to have made any discovery, but he has done what is at least equally essential for practical purposes. By separating the truth clearly and unequivocally from the numerous errors of fact and opinion with which it was mixed up, and thus converting into certainties points of doctrine in regard to which positive proofs were previously inaccessible, he has given to what was doubtful or imperfectly known a fixed and positive value which it never had before, and which, being once obtained, goes far to furnish us with a clear, connected, and consistent view of the general process and laws of digestion. Other physiologists have attempted to effect the same end by experiments performed upon the lower animals, but these are open to so many forcible objections that we cannot always adopt their conclusions, even where they

seem to be most clearly deduced. Not to mention the cruelty inseparable from the performance of such experiments, the pain which the animal suffers necessarily disturbs the regularity of the functions under examination, and in a greater or less degree vitiates the results. And even if this were not the case, the difference between the digestive organs in man and in the lower animals is so great that it would often be unsafe to assume conclusions as applicable to the former which have been verified only in the latter.

In the present volume it is proper to bear in mind the circumstances under which the experiments were made and the account of them was written. Dr. Beaumont was far from enjoying the leisure, resources, and scientific co-operation so easily accessible to the physiologists of any of our European capitals. Stationed in a comparatively remote quarter in the exercise of his duties as an army surgeon, and previously unaccustomed to minute physiological research, he conducted his inquiry under many minor disadvantages. When he came to publish, also, his want of experience in writing prevented him from making the most of his materials, and doing that justice to himself which he might otherwise have easily accomplished. In the arrangement of his experiments, for example, Dr. Beaumont has followed the order of time, and thus mingled many things together, where a more practised inquirer would have classified them according to the subjects in illustration of which they were performed, and thus given a greater unity of purpose to each of the different series of which they are composed. But, although this defect diminishes the facility of access to the results, it by no means detracts from their intrinsic value. On the contrary, the very absence of systematized arrangement leaves a character of even greater trustworthiness attached to the individual observations than if the latter had been made under the influence of some prominent guiding principle, which might have given a bias to the mind. . . .

So much, indeed, did I consider the republication of Dr. Beaumont's work as a matter of justice to him, that, had I not expected its appearance from some other quarter long ago, I would have undertaken the task at an earlier period, and even now I can account for the omission only by supposing that very few copies of the original have reached this country. Everywhere, both in British and foreign books, we meet with reference to and often inaccurate extracts from it, but almost nowhere is it spoken of as if the work itself had been consulted. I trust, then, that in now presenting it I shall be considered as rendering an acceptable service to British and Continental physiologists, as well as a pleasing act of justice to its deserving author. . . .

One can not help admiring the unselfish spirit which actuated Combe in the reproduction of Beaumont's work. As soon as copies were out of the press, Combe sent through his brother to Dr. Beaumont an autograph volume of the new edition, together with a volume on dietetics, with the following note :

EDIN, 1 May, 1838.

MY DEAR SIR: May I beg your acceptance of the accompanying volumes as a small expression of my respect of your character and scientific labors. I need not detain you by repeating in this note the high estimation in which I hold you. The volumes herewith sent will, I trust, convince you of the fact, and that it will not be my fault if you do not receive the credit justly due to your valuable and disinterested services. I remain, My dear Sir,

Very respectfully yours,

ANDW. COMBE.

George Combe left the books with Mr. John Turnbull, Carleton House, Broadway, New York, who promised to convey the package to Dr. Beaumont, believing that he was still in Plattsburgh. On learning that he had moved to St. Louis, Mr. Turnbull sent the package there. Mr. William Combe, then residing in Albany, fearing that the package had gone astray, in view of Dr. Beaumont's change of address, wrote him in March, 1839, making inquiry. Dr. Beaumont responded:

I am happy now to have an opportunity of tendering my grateful acknowledgements for the special interest you have taken in the publication of my Gastric experiments and the disinterested compliment and credit conferred on me by voluntarily sending it to yr. deservedly distinguished Brother in Edinburgh, by whom it has been reprinted, with valuable annotations, and more than merited notice taken and references made in his late invaluable work on Digestion and Dietetics, both of which I had the special honor and satisfaction of reviewing a short time since thro the agency of Mr. Turnbull, of N. Y., and by the hand of Mr. John Turnbull. Mr. Turnbull had advised me on the subject several mos. before pr. mail, but, in consequence of the unavoidable delays of transportation from low water last fall and the severe frost of the winter, the package was not recd. till the opening of the navigation this Spring, a few weeks since, all in good order, with a very kind and complimentary note from your Bro., and acknowledgements of which will probably have reached him ere you receive this. Sincere thanks and continued respectful regards are due to my friend and acquaintance, Dr. McCall, and my grateful and profound consideration to yr. Bros. whenever you may be so happy as to see or communicate with them, and believe me, though an entire stranger, etc.

The reply to Sir Andrew, in thanking him for the volumes of his work, ran something like this:

I have the satisfaction of acknowledging the recent receipt of Copies of your Work on "The Phys. of Digestion and Process of Dietetics," and Reprint of my "Expts. and Observations on the Gastric Juice, etc.," accompanied by yr. very kind and complimentary note. . . . The honor and



Brevet Brigadier-General Thomas Lawson, surgeon-general of the United States army, 1836-61. (From an original painting in the surgeon-general's library, Washington, D. C.)

gratification confer'd by thus tendering me the tokens of your high regard and esteem, and the favorable notice taken of my work, are far more than commensurate with its worth, . . . and surpass my ability to adequate returns.¹⁰

¹⁰ These incomplete sentences were found in rough draft, hastily scribbled on a slip of paper.

Dr. Thomas Lawson¹¹ had been appointed to succeed Dr. Lovell as surgeon-general. It would seem that when he assumed the position, it was with some preconceived prejudice and animosity against his friend of former days. One can not help concluding from a fair study of the case that this jealousy had been aroused by the many attentions and frequent favors granted Beaumont by his predecessor, Dr. Lovell. While Beaumont was conducting his experiments on St. Martin, Lovell permitted him to take leave of absence whenever necessary to further his studies, to change his post whenever occasion demanded it—in fact, gave him many liberties that probably were not granted other surgeons in the corps.

Within a year after Lawson assumed the reins of the medical department, Beaumont began to hear rumors that he was to be transferred to Jefferson Barracks, a location which would have rendered private practice in the city practically impossible. While there was no definite basis for such fears, there was an undercurrent which caused him to feel rather restless. On February 4th Major Ethan Allen Hitchcock¹² wrote him from Washington :

I have just had the pleasure to read your letter of the 24th inst., and the only thing that grieves me is your account of Lucretia's arm. Captain Lee¹³ told me she was hurt, but I had no idea it was a fracture. I hope no effects of it will remain, and, if so, she may thank her stars for her daddy's skill. . . . I told Lee of Lawson's inquiries after you. There seems not the smallest hint of a purpose of changing your station—I mean, of ordering it; for as to changing it, I suppose that is not so easy done as talked about.

This statement doubtless put his fears at rest for a time, coming, as it did, from one in touch with the highest officials in the army. In the spring Beaumont requested of the surgeon-general a leave of absence for the purpose of looking after some business interests at Green Bay, in reply to which Dr. Lawson wrote :

I have to inform you that, as similar applications from officers having much stronger claims to indulgences than yourself have been refused on

¹¹ Dr. Thomas Lawson's military career began with the War of 1812, when he was made surgeon's mate, and ended fifty years later. He was surgeon-general for a quarter of a century, and was recognized as a capable and fearless executive. He inaugurated many important changes in the department during his administration, and welcomed any innovation that promised improvement of the service. It is noteworthy in this connection that he strongly favored private practice by army medical officers, and ruled that "when it does not interfere with their military duties, medical officers have a right to give their professional advice to whomsoever they please." It could not, therefore, have been this factor which influenced him in his attitude toward Beaumont.

¹² In a later chapter the intimate relationship existing between General Hitchcock and Dr. Beaumont is brought out in a series of friendly communications.

¹³ Robert E. Lee.

account of the pressing demands for Medical Officers, your request can not be granted. Should your private interest require your presence at Green Bay, and you think proper to employ a suitable physician to perform your duties during your absence, free of expense to the United States, you are authorized to do so, provided it meets the approbation of the Commanding General of the Department.

In the meantime Major Hitchcock had obtained other information concerning Lawson's intentions, and had informed Beaumont of it. With the knowledge and assurance, therefore, that the surgeon-general would welcome an opportunity and a pretext for making him feel the force of his official position, Beaumont replied in a letter that was anything but diplomatic:

I regret that you should think it necessary to attach such conditions to the leave, not so much on account of the expense it may throw upon me as the consideration that seems to have prevailed with you that I am not entitled to the indulgence I requested. If for the single reason that no medical officer was disposable for the performance of duty here during my absence you had thought proper to charge the expense to me, though I might have thought it hard, it would have appeared much less onerous.

I do not know what stronger claims others may have, but I am sure that my request was perfectly reasonable, and, if the duties upon the medical staff of the Army make so exclusive and absolute a demand upon the time of officers that so reasonable a request cannot be complied with, there is great need of additional officers in the Medical Staff of the Army, but I rather think you have in this instance underestimated my claims. Unless, however, you think proper to reconsider your decision, I may be compelled to pay the expense of services here during my absence, for a just regard to my interests will, I believe, oblige me to be absent six or eight weeks.

While writing, I will refer to a subject to which my attention has been called by a letter from Maj. Hitchcock, in which I am informed that your views of the propriety of my Station at this place do not accord with those of your predecessor, and that you appear to think Jefferson Barracks a more suitable Station.

Now, My Dear Sir, without the least desire to question the correctness of your views, or the propriety of your general arrangement of the Medical Department, permit me respectfully to ask (and I hope you will do me the favor, candidly and promptly, to answer) whether you have any such arrangement in contemplation, or even seriously think of ordering me from this to Jefferson Barracks? I presume to be thus frank and explicit from agreeable recollections of former friendly associations,¹⁴ the confidence I feel in the candor and correctness of your disposition, and firm

¹⁴ They had been fellow-officers in the War of 1812.

belief in your general desire to promote the greatest good of the public service with the least prejudice and inconvenience to the individual interests of your Department. I would ask then, how can Jefferson Barracks, in its present endowments, be considered more appropriate or important a Station for me, or any other medical officer of whom the same duties would be required, than this city? The amount and importance of the official duties required at that Station bear no comparison with those to be performed here. There are Gen. Atkinson, his family, a handful of recruits occasionally and some few useless old soldiers, with nothing to do but to preserve their health, if they will, by procuring and regulating their own diet, scarce liable to accidents and more seldom to disease, spending much of the time in this city, and receiving the benefits of my professional advice and prescriptions whenever wished for or requested. But here in St. Louis are located six or seven Army officers and their families, Lt. Col. Brant, Majors Lee and Stewart, Capt. Kingsbury, Capt. Lee, Lt. Reed and Ruggles, a recruiting Rendezvous, with its party and recruits to be prescribed to, examined and reported. The Arsenal, with its command, some twenty or thirty men, besides women and children, and Capt. Symington, his family and subalternes, members of military courts, sojourning officers, under orders and transient members of the Army, which are neither few nor far between, all of whom claim and receive my free and gratuitous professional services, all these together, with the duties of Medical Purveyor for the Western Division, make the official duties required of me here constant and multifarious, and ten times more important, necessary and useful than can possibly be required at the Barracks in the present state of service.

Under this view of the subject and present exigency, it is impossible to conceive the necessity, or even the propriety, of modifying the present arrangements by ordering me to any other post or station, unless it be to devolve upon me the necessity of making great sacrifices of interest and inclination, or of being compelled to resign my place in the Army, either of which alternative would be very unpleasant, and neither of which do I hope to be forced to.

I am, and always have been, willing and ready to perform any duty required of me, am now willing to continue to attend to those incumbent on me at this Station, which are equally arduous and necessary with those of any other, and of paramount importance to most others in service.

Now, uninformed of any particular exigency, unaware of having forfeited my claims to the common indulgence or my right (after my seniors)¹⁵ to a preference of Stations, and conscious of having faithfully discharged my duties to the Government, I cannot acknowledge just cause, or even seriously anticipate an order of removal from this place. I presume some envious or discontented junior would be glad to see my Station

¹⁵ "Senior surgeons and assistant surgeons shall respectively have choice of stations on written application through the surgeon-general, specifying the regiment or post preferred," etc. (Brown's "History of the Medical Department of the United States.")

changed, but I know you would not yield your official sanction to gratify any of that class.

Allow me to add here, without subjecting myself to the charge of vanity or egotism, that for any professional advantages I may be supposed to enjoy here I am not indebted to the Government, but to my character and exertions. These advantages, be they more or less, are not an incident to the Station, but are fruits of toil, I am sure, if not talent, and it is by no means certain that a successful applicant for my Station as a public officer would likewise succeed to the advantages I may properly characterize as personal.

I confide in the uprightness of your disposition, and rely upon the correctness and impartiality of your judgment.

He evidently received no satisfaction from the department in reply to his letter, which could not do otherwise than add fuel to the fire which was already smoldering. The following letter to his friend, Dr. King, indicated that he was well aware of the fate that was in store for him, though there was still some uncertainty as to the nature of the undeserved rebuke that would be meted out to him:

Accept my thanks for yr kind solicitude for my desire and ambition. I am in full run of successful and lucrative professional practice in this City, to the exclusion almost of the common civilities and hospitalities due to old friends and acquaintances. I am too constantly engaged in professional duties to enjoy my friends or the comforts and pleasures of domestic and social life. Official duties, though as ardent and important here as at any other Station, constitute but a small portion of my labors, and were but very little increased by the "Military of Rank," as you term it, while they were with us.

I hear frequently from various sources that I am to be removed from this station, ordered to Florida, etc., etc. But I don't believe it. I have too much confidence in the correctness and management of the Head of our Department, and the justness of my claim to this preference, to apprehend for a moment that I shall be removed at all without some more important emergency or pressing necessity than seems now to exist. So long as the Government sees fit to continue this as a Station for a Medical Officer, I shall expect to retain it, in preference to any discontented Junior official, the murmurings and importunities (if any there be) of either Succors or juniors of the Line or Staff to the [contrary] notwithstanding. The offl. duties to be performed here are as important and arduous as at most other places. I have and shall continue to perform these as faithfully as any other officer could, with equal convenience and much more advantage to myself. I know of none with fairer claims. I confide in the justice and integrity of the Heads of the Departments, and greatly appreciate your friendly and efficient influence in my behalf, and will thank you to continue if necessary.

I here enclose you a Ten dollar U. S. Bank note as my proportion of the present assessment to the memory of our mutually lamented and respected chief.¹⁶ It ought to have been forwarded before, but the constant press of professional business is the only excuse I have to offer. Should more be necessary to complete the work, I shall freely add my proportion to any for the contribution. I hope it will not fail to reflect honor upon the survivors as well as the deceased by its design and execution.

I have only time to add my best respects for the Surgn. Genl., and hope he has ere this perfectly recovered his health, and feels disposed to let me "quiet be" where I am while I am able to perform the duties that might be required of a successor, for I fear I am getting too old and infirm, or too indolent and selfish, to be ordered away while there are so many juniors requiring active field duties to perfect them in their professional qualifications and enhance their official usefulness.

About a month later Dr. Beaumont's worst fears were realized in the receipt of "General Order No. 48":

ADJUTANT GENERAL'S OFFICE,
WASHINGTON, Sept. 18th, 1839.

By direction of the Secretary of War, a Medical Board, to be composed of Surgeon W. Beaumont, Surgeon P. H. Craig, Surgeon R. C. Wood, and Surgeon H. A. Stinnecke, Supernumerary member, will convene at Fort Brooks, Florida, on the 15th of November, 1839, or as soon thereafter as practicable, for the purpose of examining such Surgeons and Assistant Surgeons of the Army as may be ordered to present themselves before it. . . .

By order of Major General Macomb.

On the receipt of the order, Beaumont tendered his conditional resignation, providing the department still insisted on his going to Florida. Not content with this, the department maintained that the order must be carried out before his resignation could be considered, as shown by the answer of Dr. Lawson:

Your letter of the 3d instant and the accompanying copy of a communication to the Adjutant-General of the Army have been received. The Secretary of War¹⁷ has decided that you shall obey the order directing you to proceed to Florida before he will take into consideration the tender of your resignation.

Hearing of Beaumont's resignation, his dear friend, Major Hitchcock, wrote him from Washington a letter full of sympathy

¹⁶ The medical corps of the army erected a monument to the memory of Surgeon-General Lovell, soon after his death, in the Congressional Cemetery at Washington, D. C.

¹⁷ J. R. Polinsette. It is a rule of the army that an officer may not resign while under orders.

and expressing his views of the shortsighted policy of the surgeon-general.

I will not travel any further without sending you one line at least. I hear with regret of your resignation, though it was what I expected as soon as I heard of your orders. This thing is all wrong, but it appears beyond remedy. The policy of the department has driven the best surgeon out of the army without the slightest occasion. I am sorry to lose you from the same profession in which I serve for the double reason of personal friendship and professional pride. Nothing but a miserable and contracted view of the public service could have dictated the late orders. In the medical branch of the service the officers ought to be encouraged in their efforts to obtain private practice, for in that department experience is almost everything, and the medical officer who has the most extensive private practice is not only proved by that fact to be the best physician, but confers the highest honor on the service. The late course is wrong in other respects. It is unjust to you individually, for exceptions are made to what in your case may be asserted to be a rule. . . . But the mischief is done, and all I can say now is, God bless you in your entrance into civil life, and make you prosperous and happy as you deserve to be, for a better physician or better man is not to be found in any country. . . .

P. S. Mr. Johnson arrived last evening, and tells me he left you all well. He says Captain Lee spoke of coming East, as his work¹⁸ has been suspended. If he is still with you, pray give him my best regards.

To this Dr. Beaumont replied:

. . . It is a matter of perfect indifference to me whether I continue in the Army or not, but any attempt to cast disgrace or censure upon my character or conduct will be manfully resisted. When they expunge my name, I will expose their wickedness and partiality for rascality. But enough of this—let them mind their own business and I will mind mine.

Soon hereafter (December 20th) he wrote Adjutant-General Jones:

¹⁸In 1835 Captain Robert E. Lee was sent to St. Louis in charge of a corps of engineers, where he performed a most important service in preventing the Mississippi river from changing its course and from leaving the city "high and dry." At the same time he designed a system of river improvements. His work kept him here for several years, during which time an intimate relationship sprang up between him and Dr. Beaumont. Lee spent many leisure hours at the Beaumont home and endeared himself to every member of the family. The following note from Mrs. Lee to Sarah Beaumont gives a fair idea of the intimate relationship existing between the families: "MY DEAR SARAH: I went over to the great city of Washington yesterday to look for something pretty to send you, but I suppose the members of Congress have taken everything with them, for I could find nothing worth sending. Such as they are, tho, you must wear for my sake. The ring Custis sends to Cushy and the comb to Bud. The gauze cap ribbon I send to your mother. Tell her she must wear it at her musical soirees, and I send you a neck ribbon of a very fashionable style and a pair of riding gloves. Mr. Lee has packed up my letter and is waiting for these things, and so farewell again. Yours, M. C. L."

Having conscientiously assigned good and sufficient reasons for not complying with Order No. 48 in my communication to you of Oct. 3rd, I had hoped they would have induced the countermanding of the order or the acceptance of my resignation. But it has been stated here in presence of several gentlemen by a lawyer recently from Washington, who assumes to be in the confidence of the Secretary, that I am to be stricken from the rolls for non-compliance with the order referred to. I cannot believe such injustice will be done me. I have served more than twenty years honestly and faithfully, and know no law, rule, regulation or precedent that should prevent my withdrawing from the service when I cannot perform the duties required of me.

I shall not advert to other cases or draw comparisons between faithful service and dishonor, but I do expect that the former in our government will at least meet with as much forbearance and more favor than the latter. I am, and ever have been, actuated by just and honest motives toward the public service, with no more selfishness than strict duty to myself and family and the approaching infirmities of age imperatively demand. I ask no more of the government. I will not expect less.

Captain Lee had returned to Washington, having suspended his work in St. Louis, and soon afterward wrote to Miss Sarah Beaumont, who was a great favorite with both Lee and Hitchcock:

Tell the Doctor that among my first visits was one to the Surgeon-General. He was very mysterious. . . . I endeavored to find out what course he had determined on. He will agree with me that this is a difficult job where the individual has not made up his own mind.

But the individual *had* made up his mind, and, even at the time of Lee's visit to the surgeon-general, "General Order No. 2" was on its way to Beaumont. In spite of all his remonstrances and entreaties, the inevitable crisis came, and his career as an army officer was ended.

ADJ. GENERAL'S OFFICE,
WASHINGTON, Jany. 20th, 1840.

The resignation of Surgeon Wm. Beaumont has been accepted by the President, to take effect on the 31st of December, 1839.

By order of Major General Macomb.

R. JONES, Adj. Genl.

Though his resignation was accepted, and he had not been peremptorily dropped from the rolls, he still determined to fight to the bitter end. While he had stated to Major Hitchcock that it was a matter of "perfect indifference" to him whether he remained in the army or not, he afterward explained that when the acceptance of his resignation finally came, his "pride and indignation"

were aroused to such an extent that he could not yield without making a strong fight for reinstatement.

He wrote Senator Lewis F. Linn, of Missouri, who had been a fellow-surgeon:

. . . I have respectfully and earnestly to request you, as guardian of the rights and privileges of the people of this state, and of myself among the rest, to defer, if in your power, any official action of the Senate upon the nomination of a successor to the vacancy I may have occasioned till I have had an opportunity to communicate my reasons for petitioning to be restored to my commission and place again as before.

I take the liberty of making this hasty communication and request (having this day unexpectedly received the order of acceptance), lest the name of my successor be sent to the Senate for confirmation before I have time to lay my case before the president for consideration, confidently believing myself fully justified in so doing, and that you will rightly appreciate and promptly attend to it. . . .

His next step was to memorialize President Van Buren, and the memorial was presented by Senators Wright and Linn:

To His Excellency, Martin Van Buren, President of the United States.

The undersigned memorialist, Wm. Beaumont, recent Surgeon of the U. S. Army, in the 56th year of his age and the 24th year of faithful duties to government, now finding himself unjustly thrust from the public service, most earnestly and respectfully petitions your excellency to be again restored to his late official rank, commission and place for the following reasons and considerations, to wit:

Your memorialist having been in the Army, with the exception of a short voluntary suspension from 1815 to 1819, and in almost continual performance of important duties on the exposed and comfortless confines of our country from 1812 to 1840, serving through the campaigns of 1812, 13 and 14 on the northern and western frontier during the late war with England, assigned to the extreme outposts and stationed at Fort Mackinac, Howard and Crawford from 1819 to 1832, doing the duties of these several posts, with their respective complements of troops, without assistance for 12 years or more, with the various additional duties, fatigues and exposures of the several predatory Indian warfares with the Winnebagoes and other hostile tribes from 1827 to 1832, and only relieved from those active field and garrison duties at the termination of the Black Hawk War, so called, in Aug., 1832.

After this, for a few months, your memorialist was permitted by the Department merely to anticipate, but not to realize, "Leave of Absence" and suspension from official duties for 12 months for the special purpose of going to Europe, with a view more perfectly to complete a series of gastric experiments and observations upon the stomach of Alexis St. Martin, whose life and extraordinary constitution had been preserved by your memorialist's individual exertions, and which was then considered

by the Heads of Department, members of Congress and the scientific communities in general of paramount importance to mankind, and worthy of public patronage and physiological improvement.

Before, however, one-fifth part of the time necessary to accomplish this desirable object had elapsed, and in the midst of its execution, an emergency of service required your memorialist's return to official duty, and he was put on special service in March, 1834. In June following he was sent to Jefferson Barracks to relieve a sickly, suffering surgeon at that post, where he remained on duty till Nov. or Dec., 1834. Early in 1835 your memorialist was assigned by special order to this place for the special purpose, in addition to the ordinary official duties of the station, of affording him an opportunity for prosecuting further experiments and observations upon the gastric juice of St. Martin, without prejudicially affecting or interfering with details and duties of the Medical Department.

And your memorialist has been on constant official duties, rendering the necessary medical aid and attention to 7 or 10 resident officers and their numerous families of women and children, sojourning military men, members of martial courts and inquiries, to the command at St. Louis Arsenal, the recruiting parties at this rendezvous, examining recruits, purveying medical supplies for the western posts, making returns, reports, etc., from June, 1835, to the present time, duties more constant and multifarious than [those of] any other officer in the army. And to this place and to these duties was your memorialist specially assigned by the late Surgeon-General Lovell and War Secretary Cass, with the express understanding and expectation that it was to be as permanently enjoyed as other of the senior medical officers had been and are still privileged to enjoy their respective favorite stations, as merited rewards of long and faithful service, and a rule and precedent of justice and equity adopted in the spirit of magnanimity by those Heads of Departments, and long since become the established usage of service. Instanced, Surgeon Mower has been thus indulged in a permanent location at New York for more than 20 years continuously; Surgeon Harvey at Baton Rouge since the close of the war in 1815; Ast. Surgeon Sargent at Fort Constitution from time immemorial; Turner long lived and died unmolested at Fort Woolcot; Day permitted to enjoy any place he may choose for its light duties and pleasant location; Archie completely domesticated at Fortress Monroe; King fixed at the Capital at Washington; and Weightman forever at St. Augustine. All this is just and proper, and but merited indulgence generously awarded to age, professional worth and official faithfulness and integrity.

Your memorialist is no less fully entitled and deserving of similar and equally continued indulgence. He was assigned to this station and to these duties by the same rule and upon the same principles. He is not conscious of having in any way forfeited his claim to this preference. He knows no reason why he should be deprived of it now, conceives no justifiable cause, nor believes an adequate emergency to warrant the order for his removal.

Great injustice, therefore, having been done your memorialist by General Order No. 48 of Sept. 18, 1839, peremptorily requiring him to repair to Florida for duty, and the consequent acceptance by yr. Excellency of his constrained resignation, only to obviate the difficulties of declining an order the requirements of which I could not perform from my well-known infirmity and defect.¹⁹ And your memorialist, believing a second order to have been issued in consequence of some erroneous impression or wrong influence to his official prejudice and personal injury, now conceiving it due to himself, just to the government, respectful to the Department, and consistent with the principles of subordinates to make this appeal to the President of the United States for proper redress of the alleged grievance, confidently relying upon his Excellency's well-known principles of justice, liberality and patriotism for restoration of his right to the official rank, place and appointment from which the unexpected acceptance of his resignation has taken him.

Soon after this (April 3, 1840), and in the same connection, he wrote his friend, Major Hitchcock:

. . . I cared but little, you know, how they decided at first. But on the receipt of the order of acceptance my pride, Spirit and indignation were excited at such gross and egregious injustice towards me, and I resolved to resist the influence that had induced it, and, of course, memorialized the President to be restored and continued at this place.

I submitted it through Senator Silas Wright and Dr. Linn, with my reasons and explanations. I have not heard from them since. I know not how promptly they will give their attention to the subject. It was my intention to have gone on and attended to it myself, but I cannot get away; and, if I could, I am such a poor hand at managing such things, I had rather trust it with you and my other friends there, and I rely much on your friendly interest and influence in urging the case forward. . . . Do all you can for me and not injure yourself.

He had also written Captain Robert E. Lee to use his influence, in response to which Lee wrote from Washington on May 19, 1840:

I am afraid you will think that I have neglected your letter in relation to your application to the President to be restored to your rank and place in the Army. An hundred times have I determined to write to you, but as often, when on the point of executing, have I delayed from day to day in the hope of learning something satisfactory. If Mr. Wright has ever presented your Memorial to the President, it has never reached, as far as I can learn, the War Dept. Should it be so referred, it would naturally be sent to the Surgeon General for a report, and, as well as I can ascertain his sentiments by indirect approaches, he will not recommend your reinstatement, and I think I may say will oppose it. He appears to

¹⁹ Refers, no doubt, to his defective hearing.

have some feeling on the subject, the cause of which I do not know. Supposing your application would come before the Adj. Gen., I had taken occasion to impress him with your usefulness, skill, attention, etc., and the loss that the service would sustain, particularly in the West, by your withdrawal. I spoke to Cooper in the same manner, without telling them your present views, as they might have thought my object was to influence their action, and they both coincided with me in regretting your loss, as did also Dr. King, but I am almost certain that the subject has not been broached to them, unless it has been within a few days. I do not know Mr. Wright, and I have disliked to call on him purposely on the subject, as he might have thought I was interfering in what did not concern me. I have, however, thrown myself in his way, without success, in the hope of learning what he considered the prospect of a favorable decision. He is so engrossed in politics and in the affairs of Congress that I suppose he cannot find time to withdraw himself from them. At any rate, I have never been able to meet him. I showed your letter to Col. Totten, who showed every desire to aid you, and promised to let me know what he could discover, but he has not been more successful than myself. When Major Hitchcock passed through we had a long consultation on the subject, and he made a special visit to the office of the Surgeon General, which he said convinced him that nothing could be done in that quarter. Now, has Mr. Wright presented your memorial to the President, and what does he say of the probabilities of its success? For your reinstatement in the Army I should personally take great pleasure, and I believe it would conduce to the interest of the service generally. I should be particularly glad to be instrumental in it, but in the present circumstances I am at a loss how to proceed without showing an obtrusive interference, which I have always seen produce injury in similar cases. You must let me know how far matters have progressed, and whether there is anything so small a man as myself can do to shove them along.

Surgeon DeCamp, then stationed at the barracks, about twelve miles south of the city, had received orders to perform the official medical duties at St. Louis and the arsenal, and expressed his readiness and willingness to do so when called upon. There seemed, however, to be a general understanding between him, Dr. Beaumont, and the officers stationed at St. Louis that it was impracticable for him to perform these duties at such a great distance, especially in cases of emergency, since "death or remediless suffering might ensue" before relief could be obtained. With this understanding, Dr. Beaumont continued to render medical services to the families of the officers at St. Louis and the arsenal until the fall of 1840, "with the full, fair, and honest conviction and belief that he was doing in strict accordance with the rules of propriety, humanity

and justice a necessary and essential public good." After the expiration of a reasonable time he presented to the department for this extra service an account which he conceded to be "irregular and informal," but at the same time "correct and just." Evidently on the receipt of this account the surgeon-general threatened one of two procedures—either he would disregard the account entirely, or, paying it, would deduct the sum from the salary of Dr. DeCamp. On hearing these rumors, Dr. Beaumont expressed himself in the most caustic style concerning "the absurd opinion, contracted views, narrow-minded, vindictive spirit and petty tyrannical disposition" of the "weak, waspish and willful head of the Medical Department," and prided himself on having the "privilege of detesting the man, the motives and mind from which such egregious folly, parsimony and injustice could emanate and be promulgated."

In order to protect Surgeon DeCamp "from such preposterous abuse and injustice and petty pawn," and himself "from the stigma of being made the means and medium of such wanton and unwarranted oppression and injustice," he gave Dr. DeCamp a written statement of the case:

. . . The least consideration might have shown Dr. Lawson, if his capacity was not at zero, that it was utterly impracticable for you or any medical officer to render at the Arsenal and in this city the services due to the sick of the Army while you were stationed at Jefferson Barracks, 10 miles distant, and the result has fully demonstrated the folly and absurdity of his ridiculous order. To guard against the effect of that folly, which might rather be called wickedness as endangering the sick for whose attention it was his duty to provide, I have given my own attention, and, having thus acquired a just claim for compensation, the Surgeon General, it appears, in a spirit every way becoming him, but disgraceful to the head of the Corps over which he presides, has come to the determination to charge you with the amount rather than allow it to me. But he can upon no principle whatever charge the amount to you, yet, if he should so far exert himself in an act of tyranny as to produce a stoppage upon you, I will readily withdraw all claims from adjudication at the head of the Department and will look to a higher officer, where I may hope to find more intelligence, more humanity, more liberality and a better sense of justice. . . .

Congratulating myself upon having escaped service under the present Chief of the Medical Dept., I sincerely commiserate my associates in the Army who remain subject to his caprice and tyranny, the natural fruits of ignorance and vanity.

The final decision on this point was summed up in the following

communication from the secretary of war through the surgeon-general's office (November 4, 1840):

. . . In respect to the case of Dr. Beaumont, he has had no authority whatever for rendering service to any one in behalf of the U. S. after he received notice that his resignation had been accepted, nor had he any proper excuse for doing so. His connection with the government then entirely ceased, and he should promptly have turned over to the officer of the Medical Department, who was there and who was ordered and ready to perform the duties, all the public property, etc., in his hands. For compensation for services rendered to any one in public employ after that period he must look to the individual and not to the government. . . .

This put an end to any further efforts on the Doctor's part to be reinstated, and thus was terminated his brilliant military career of more than twenty-five years. It seems sad indeed that his services should have been so abruptly and unsatisfactorily brought to a close, for his achievement had brought credit, not only to himself, but to the army as well. Even today his brilliant work is pointed to with pride by the officers of the medical corps of the army.²⁰

²⁰ Surgeon-General Torney, in a recent address before the Philadelphia Medical Club, cited this as the first great scientific achievement of a member of the medical staff.

CHAPTER XII.

1840-1853.

While greatly dejected over the results of his affair with the War Department, Beaumont did not permit himself to take his dismissal from the army too seriously. He still had a lucrative practice, a host of devoted friends, an undying name, and, above all, a devoted and affectionate family. Up to this time he had resided with his family in the city, occupying a house at Fourth street and Clark avenue, with an entire block as a playground for his children, who learned here to ride horseback and engage in various other outdoor sports. Shortly before his resignation was accepted he began negotiating for a piece of property, then well into the country, but now in the very heart of the city of St. Louis. The beautiful simplicity of his home in the country could not be better described than he himself has painted it in some of his affectionate communications to Ethan Allen Hitchcock. While his fate as an army officer was still in the balance, he wrote :

Whether I remain a Soldier or turn Citizen, and in anticipation of an acceptance of my tender, I have purchased the Gamble Place, ayont the College one mile, where I am going to reside and improve. We have just moved out, and not yet settled. The family are delighted with their prospects and perfectly happy. The children are looking for Frances Lynde¹ every Boat now, to join and instruct them. The water has been so low that boats could not navigate the Ohio, and many have been stuck on Sandbars, filled with passengers, for a month or two past, amongst whom, we suppose, Miss Lynde is, as she wrote that she could start in October, and we have heard nothing from her since. I hope she will not disappoint us, for we are all prepared to receive her, and the children emulous to commence receiving instructions from her. We quit the old Clark mansion with alacrity 4 days ago, turned over the house and all the inmates to a new keeper, and left the Sykeses the reigning gossips of the Table. I continue to practice as usual, only getting rid of the night calls,

¹ Frances Lynde afterward married Hon. George W. Palmer, of Plattsburgh, N. Y., still living at the age of 94 years. Miss Helen Palmer, their daughter, informs me that her mother was born at Plattsburgh in 1819, and received her education at Mrs. Emma Willard's school in Troy. After graduating there, she taught a year or more in Kentucky, and then went to Dr. Beaumont's family, where she remained for some time. "I know that she was extremely happy there, and was very fond of Dr. Beaumont, of Mrs. Beaumont, Aunt Debby, and of the girls. There must have been a very pleasant circle gathered about the Beaumont home. My mother spoke frequently of the Lees, the distinguished army family, and of General Hitchcock, and others whose names I have forgotten."

putting them upon Sykes. I ride in early every morning and out at evening, always finding the family happy and delighted to see me. Lucrece jumps round my neck, Bud grasps my hips, and Sarah gravely ushers me into the room, where I find "Aunt Debby" cheerful and smiling as a basket of roses. I wish you could pop in amongst us as you used to do, and enjoy with us a little rural felicity.

Sarah seems perfectly contented and joyful with her Piano, her needle, her books, and her Pony. Free air and exercise, undesirous of the city amusements, Lucrece and Bud ramble and gambol, ride, romp and range through fields and bushes like two young colts let loose from the stalls. Cush says she "dont never want to go to town again," but would like to have you here to play with her.

A little later, when the acceptance of his resignation came and he began to realize its full import, he wrote his friend to whom he went with all his joys and sorrows:

Even the whole family participate in the dejecting influence, and often feel melancholy, though very pleasantly situated out at my place, enjoying many comforts; with our charming friend, Miss Lynde, to instruct the children, Mr. Siedin Stricker to teach them Music and German, Mrs. Beaumont to nurture and caress them, myself to scold and admonish them; a choice few friendly visitors occasionally from the city to enjoy our cheer; plenty of room to ramble and ride, swing, frolick and gambol; indeed, few things only seem wanting to make it a paradise, and could you just drop in amongst us of a morning and evening, with your flute and friendly features, as you were wont to do, our enjoyments would be complete. . . . The tones of the piano seldom strike my ears, and then sound more like a death dirge than the soul stirring symphonies so often heard before you left. No soft sounds of the flute break the dull, silent monotony, and enliven the spirits of the little group that gather round the hearth at evening now. We all feel your absence most sensibly, and none more so than Lucretia, though she says nothing. Sarah says she has not sufficient incentive to finger the keys of her piano; much she wants the flute to excite and enliven her genius. Bud looks at his Penknives and pantaloons, and sighs his regrets. Aunt Debby looks lonely, and rocks herself "quite fast to sleep." Your humble servant feels like a "fast-day in court," the rest of the household feel for themselves—I cant tell how. Lee is with us, kind and affectionate.

During the early months of 1846 Lieutenant-Colonel Hitchcock was compelled to leave his regiment on the Mexican frontier on account of a protracted illness, for the treatment of which he was under Dr. Beaumont's care. He was about to return to his command in June, when his friend and medical adviser urged him to ask the department for a continuance of his sick leave. His judg-



Beaumont's country place (forty acres), situated between what is now Jefferson avenue and Beaumont street, in the neighborhood of Olive street, St. Louis, Mo. Taken into the city limits as the Beaumont addition in 1853.

" . . . a choice few friendly visitors occasionally from the city to enjoy our cheer; plenty of room to ramble and ride, swing, frolic, and gambol; indeed, a few things only seem wanting to make it a paradise."

ment prevailed in the matter, and the Colonel spent at least a portion of the summer at the Beaumont home. The loving affection in which he held the Beaumonts is evidenced by a note in his diary:²

Tuesday, 12 P. M., the 17th Nov., 1846. Probably the last night I shall pass at Dr. Beaumont's house, for I have taken passage on the Algoma for New Orleans and the Army in Mexico, and am to start tomorrow morning. If I were to thank God for anything, it would be for the friendship of this family, for its unlimited kindness and confidence—not for a brief period, but for many years—and for the feeling that I have endeavored to deserve it.

A few months after Colonel Hitchcock had returned to his regiment and was again in the midst of the Mexican War, the Doctor wrote him (April 26, 1847):

Your more than thrice welcome and highly esteemed favor of the 1st inst. has just been received, and perused and reperused by us all, with emotions of fervent delight and heartfelt gratitude and thankfulness to God for your preservation through the scenes of danger which you have just passed.

Honor and glory to the American Army, to science and to humanity! How gratified and proud you must have all felt at the unexpected and unparalleled success of such a formidable and dangerous undertaking!

You are, I suppose, wending your way toward the "Halls of the Montezumas," and threading with your Columns the same Mountain passes through which Cortes led his little Spartan band 300 years ago? What will be the result of this Mexican Expedition? Shall we not have to make conquest of all Mexico, whip the whole 8,000,000 of people into unconditional submission, and take their country under the protection and government of the U. States? I am more and more inclined to think we shall from recent events and pending aspects.

The World seems En-ciente with wonders and the accouchment near at hand, if not past ere this reaches you. The Battle of Bonavista, the Capture of Vera Cruse, the success of Genl. — in Celeforme and Col. — would seem the effects of the last parturient throes. The taking of the City of Mexico and San Louis Potosi may complete the litter for this time. I hope, however, she may happily survive the mighty birth, and soon recover from her disturbed condition, and that her accoucheur Generals, Inspectors, aids and assistants may all be satisfactorily rewarded for their great skill, science and adroit management in the delivery. . . .

Though Beaumont was not a musician, he was exceedingly fond of music, as stated in his letters to his friend, who played the flute

²Diary of Major-General Ethan Allen Hitchcock, "Fifty Years in Camp and Field," 1909.

beautifully. During the latter years of his life, however, his hearing became so impaired that he was unable to hear the ordinary tones of the piano. When his daughter played, he would sit with his teeth firmly fixed upon the casing of the piano, and thus listen to her by the hour by bone conduction. He was very fond of dancing, and, though he could not hear the music, could keep step perfectly. This was practically the only frivolous amusement in which he indulged, being opposed to most other forms, both for himself and his family. He never even entered a theater, nor permitted any of his children to do so.

He seldom expressed himself on the subject of religion, but I find in a letter to his sister Lucretia his views on the subject definitely stated in a few sentences:

. . . Be assured, my dear sister Lucretia, that your affectionate suggestions and pious admonitions to us were very kindly received and sincerely appreciated. Though I am not a professor, or even convert to any particular religious sect, yet I am a strict believer in the great good effects of moral and virtuous examples. Our own present and the future happiness of our dear children render the right constitution of their tender minds an object of our special and peculiar care and attention. To bring them up in the fear, love, and admonition of the Lord, under the influence of virtue, morality, and religion, as far as is in our power, is our sincere determination.

In his family relations he was always gentle and kind, yet determined when a principle was at stake, and, when necessary, he did not hesitate to use the "rattles." His friend, Captain Kingsbury, knowing of his habits in this connection, wrote him on one occasion:

I find daily 'tis one thing to talk of raising children and another to do it; *like you*, I use the rattles, but, if I used them as often as required, our house would be like a den of rattle snakes.

Buddy (Israel Green Beaumont), no doubt, came in for his full share of the rattles, for his father had him constantly under discipline. It was about this time that he sent Buddy to Hermann, Mo., to Mr. Moeller's school, to learn language, literature, and science, reserving for himself, however, the privilege of giving instructions as to money and morals. At Christmas time he sent him the following good advice:

A Merry Christmas to my son. I am gratified to hear and believe you are content and happy at your school, for you show evidence of such an

improvement in your studies by the style and language of your letters. Hope you have or soon will be able to fulfill your intention of abstracting your mind from boyish indulgences of useless or idle amusement and inclinations, and turn your devoted, undivided attention, thoughts and actions to the acquisition of useful manly knowledge, system, order and arrangement, and philosophical understanding of language, literature and science in the shortest practicable time compatible with the preservation of your health.

I doubt not you will have carried these resolutions into effect by strictly disciplining your thoughts to subjection, order and regularity. I know time is necessary to accomplish all these efforts. Therefore lose none in puerile indulgences or idleness, love nothing better than your works and studies; most desire true knowledge, sound wisdom and understanding. Repudiate frolic, fiction and folly. Shun frivolous gossiping associates. Make your own thoughts the most agreeable companions of your pupillage. Finally, my son, perfect yourself in manliness; be a sample of God's noblest work, a statesman and patriot, well learned and just, a good man and true.

Your mother tells me you express a wish, not exactly a need, of more contingent money. Have you expended the ten or twenty dollars you took with you when you went up, already? You should make accurate and quarterly reports of all expenditures. It is proper that you should do so. I expect it of you. I shall not withhold from or deprive you of anything reasonable or necessary for the comfort and development of facilities for your legitimate work, but you must make regular reports of the expenditures of money intrusted in your care before I can be justified in advancing you more, lest I should do you an injustice by too free indulgences, and thereby increase and encourage you to neglect your studies, and mispend your time and money for more attractive and less commendable purposes. . . .

Remember, time rightly spent is better than money, and money foolishly spent is wanton waste of both and the destruction of useful talents. You must not forget the all important advantages of rightly improving your time and opportunities of acquiring useful knowledge, wisdom and virtue. Constantly endeavor to keep in view the astonishing progress of modern improvements in the arts, sciences and civilization.

Remember, now is your time to qualify yourself for future usefulness, moral distinction and gentlemanly eminence. Reflect materially upon the probable callings and anticipations of your future career of life, and so shape your course as to ensure the fairest prospects and happiest retrospect. Let not procrastination, that old insidious thief, rob you of the most precious time of life, as he has your Father.

On various occasions he also admonished his son in the following manner:

Buddy, leave the girls alone, and let them quiet be. Make your manly visit out, and then return to me. . . . Discard the bewitching visions

and flickering thoughts of passionate love and Hymenial blisses—during your professional pupillage at least. Relinquish all undue pretention to Gallantry and obsequious attention to the Girls, Graces or the muses. Consign them all to the entertainment and embraces of fops and fools. Respect the amiable and virtuous. Be courteous and kind; treat them with cordiality and politeness, with becoming attention and sociability; but keep clean of their amiable wiles or siren influences! . . . Affiance your mind only to Books, business and professional studies and pursuit till you are a score and V, or X, or more, and then be cool and coy, as behooves a Man, but not a Boy. . . .

A few years later Buddy was sent to Green Bay for the double purpose of studying law and looking after his father's property interests there, which were now considerable. He owned, for instance, the "Washington House," the "Devil River Point Lot," and other properties, and his letters were full of good, sound business advice concerning them.

In October, 1846, Dr. Beaumont made application for a cadet appointment for his son through Senator Thomas Hart Benton,³ but Buddy refused to accept the appointment.

In his professional relations with patients, Beaumont was firm and unbending, a quality which made him both friends and foes. Many anecdotes and reminiscences have come to me concerning his unique methods in both professional and private life,⁴ which I shall not relate here, because the traits of character that they reveal have been made very evident in previous chapters. The following little note to his intimate friend, J. II. Freligh, shows his dignified, yet

³Dr. Beaumont was a devoted friend of Senator Benton, and was in frequent communication with him concerning various matters. His cousin, Andrew Beaumont, Congressman from Pennsylvania, gives a splendid estimate of the "Colonel" in a letter to Dr. Beaumont about this time, which is of sufficient historical interest to be quoted here: "I yesterday listened to your great man from the West, Colonel Benton, with pain and delight—pain that I could not hear all he said and delight at all I did hear of what he said. His speech was chiefly directed to the course pursued by John C. Calhoun in reference to the annexation of Texas and the Mexican War. He is a great man—the most of a statesman of his contemporaries. I would be proud of such a man in the state where my lot is cast. He is a real Roman, and fills out completely my beau ideal of an American senator. Mr. Calhoun is great, but lacks, in my opinion, in that noble, frank directness which so eminently characterizes Mr. Benton. When I see Benton in the Senate pouring forth the rules and rigid truths of American history, I cannot count our republic as having existed for nothing, or that it will sink soon, like the nations that have flourished in Yucatan, into oblivion."

⁴Dr. Thomas O'Reilly was responsible for a newspaper article, which appeared several years ago, in which he relates how Dr. Beaumont once barricaded Olive street against the county officials. It seems, as the city grew, Olive street was extended westward, and for some reason the county authorities decided on a "set-off" at Jefferson avenue, which would have taken the street directly through Beaumont's country place. The Doctor opposed this vehemently, but found that the authorities were determined to carry out the project. With his usual determination, he employed a number of men to throw up a breastwork right across the line of the road, and armed them with double-barrel shotguns. This caused a reconsideration of the plans by the authorities, who now wisely decided to continue the road due west instead of northwest through Beaumont's property, and thus farther trouble was averted.

friendly, attitude toward the layman. His friend wished him to have a homeopath in consultation, to which he replied :

Yours, Henry, of this morning, was recd. and kindly appreciated. No appreciable offense felt at the course you have taken for the rescue of your Infant. But your reason and sense of propriety will excuse me for declining your request of associating my professional character and reputation with the infinitesimal part of nothing, alias Homeopathy, Quackery, Humbuggery, etc.

Several young physicians had made overtures to join him in a medical partnership, among whom were Drs. Sykes and J. B. McDowell. When Sykes wrote him concerning the matter a few years before, Dr. Beaumont replied :

I should be happy indeed to afford you all the facility in my power to improve your fortune and extend the sphere of your practical usefulness and professional reputation. But I am and ever have been averse to professional copartnership, and have declined many propositions of this kind within the last two years, not only from my settled aversion, but from an existing impropriety of doing so, being myself a member of the Medl. staff of the Army, and stationed at this place for the performance of special public duties. I should feel restricted by a sense of propriety from wishing to form any connection in private business while attached to the public service. There is much business to be done here, and many medical men to do it—some 50 or 60, I suppose. I do all I can myself, and leave the rest to be done by others, feeling neither compunction nor jealousy at their good or ill success. I presume you might take your due share of business were you to come here, and it would afford me great pleasure to promote your success, should you make your appearance among us.

On entering private life, however, he decided to accept young Sykes as a partner in order to be relieved of his increasing labors, and that he might leave his duties for a few months at a time if he so desired. The professional partnership under the style of Beaumont & Sykes was begun in March, 1839. They became joint partners in business, but unequal sharers of the avails, Beaumont reserving to himself all of the returns from obstetrical practice and consultations, and “then the labors, avails, and responsibilities of the general practice were to be equally shared and divided between them.” Within two years disagreement came, and Beaumont & Sykes announced in the newspapers their dissolution of partnership. Dr. Beaumont gave as his reason that Dr. Sykes, “thinking it for his special interest and popularity perhaps, chose

to avail himself of a treacherous memory or perverted conscience, and my disadvantage of a verbal agreement without a third personal proof, to deny the contract, forfeit all confidence, sacrifice his integrity, and commence legal and vexatious prosecutions to obtain from me what is not his due and for which he has not the shadow of a just claim." A perusal of the papers shows that there was much difficulty in arriving at a satisfactory settlement.

In spite of this experience, several years later he took into his office Dr. George Johnson, a young man who had read medicine with him for three years and afterward took a course of lectures at the University of Pennsylvania. They, too, disagreed after several years, and referees named by both parties were called on to settle their dispute.

Being much in need of an assistant, he now made an effort to have Dr. Samuel Beaumont come to him from Plattsburgh, offering him an assistantship at \$1,000 a year, without his having to sacrifice his self-esteem or his identity; as Dr. Beaumont put it, "without requiring of you anything derogatory to your professional, moral, political, or religious character or standing in the community or in your own reasonable self-esteem," and promised, in addition, to give him enough to do to occupy his thoughts, and exercise his "mind and muscles to healthful fatigue and exclusion of ennui," and added:

But notwithstanding I decline more practice daily than half the doctors in the city get in a week, you thought when you were here before⁵ there was too much competition for you even to think of succeeding in business here. There is 10 times as much now, and the better I succeed and prosper for it. You must come, then, with different feelings from your former [visit], with a determination to follow in my wake and stem the current that I will break for you. I am now in the grand climax of life, three score years and over, with equal or more zeal and ability to do good and contribute to professional science than at 45, and I now look forward with pleasing anticipations of success and greater usefulness, have ample competency for ourselves and children, and no doleful or dreadful aspect of the future. To be sure, I have to wrestle with some adverse circumstances of life, and more particularly to defend myself against the envious, mean, indigent, and professional jealousies and the consequent prejudices of communities. But I triumph over them.

The Doctor had become a member of the Medical Society of

⁵In 1837 Dr. Samuel Beaumont had visited St. Louis with the intention of joining Dr. Beaumont, but could not make up his mind to "play second fiddle."



Dr. Beaumont at the age of 66 years. (From an old daguerreotype.)

"God grant you may live a hundred years in happiness and doing good to your race. As to immortality, you have already secured your share. Harvey and Galen will find themselves behind you in this item in the great day of final settlement of all earthly accounts. As long as men have stomachs and are compelled to eat food to sustain life, so long will your researches on the physiology of digestion be known and admired." (Letter from Dr. John McCall, 1846.)

Missouri⁶ soon after locating in St. Louis, and was one of its first members. A careful examination of the minutes from the time he joined the society up to March, 1843, when he tendered his resignation, shows that he took an active part in many stormy sessions, for in those days peace was not abroad in the land of medicine in St. Louis. In 1838 he was elected vice-president, but resigned at the very next meeting, doubtless for some good, but unexpressed, reason. In April, 1839, a committee of the society was appointed to determine if any member was guilty of infraction of section 10 of article I of the by-laws. At a special meeting the committee reported an advertisement in the columns of the *Republican* an infraction of this section, and recommended that the society take some action in the matter. The advertisement⁷ which offended the ethical eyes of some of the members was to the effect that "Drs. Wm. Beaumont and James Sykes (the latter late of Maryland), having associated themselves in professional business, hope satisfactorily to extend their practice to all branches of physic and surgery incident to this community. Dr. Sykes, having had much experience and success in ophthalmic surgery, will be able to afford effectual relief in most cases of the eye. Dr. S. may be found for the present at the National Hotel, except when professionally engaged." When the subject came up for action, Dr. Beaumont took the floor, and said that, little as he was accustomed to public speaking and to vindicating himself against charges of unprofessional conduct, he would endeavor to defend himself in the matter pending before the society in the best manner that he could. He could not for a moment conceive how his advertisement could be viewed by any gentleman in the society as in conflict with section 10 of article I of the by-laws; he thought that that particular by-law was leveled exclusively against empirics and empty pretenders. He said that his advertisement had not been framed without due consideration, and he thought that, instead of conflicting with the by-laws in question, it tended rather to sustain and to enforce the spirit of the law. The vote of the society was unanimous in respectfully requesting that the advertisement be discontinued, which was promptly done. It is worthy of note, in connection with this

⁶ Now the St. Louis Medical Society, organized April, 1836. Dr. Beaumont was also made corresponding member of the National Institution for the Promotion of Science at Washington on August 22, 1840, and a member of the St. Louis Horticultural Society on May 15, 1847.

⁷ An examination of the old newspaper files shows that advertisements of similar phraseology were not infrequent in those days.

controversy, that Dr. J. B. McDowell was called up before a specially appointed committee, found guilty of gossiping, and was requested to tender his resignation.

On May 8, 1840, Beaumont was elected president of the society, and later delivered his inaugural address, an extract from which will give a fair idea of the status of the medical profession at that time in this growing western town. After the usual introductory remarks, he discussed the object of medical organizations in general, and then proceeded to show how far the First Medical Society of Missouri had missed its mark. In reviewing the history of the organization, he said:

But not until the admission into the society and development of some pernicious influences, emanating from that anomalous assemblage of discontented spirits, deceived strangers and duped imbeciles, self-styled "medical conventions," in 1839, were the torch of contention and seeds of discord introduced amongst us, yet since that time we have witnessed little else at our meetings than one continual series of strife, jargon and confusion—angry debate, personal invective, abuse and total disregard of the honor, interest or reputation of the society.

And here allow me to inquire, have not falsehood and misrepresentations been propagated without, and malicious charges and prosecutions been attempted within, the Society against honorable members without their knowledge and in their absence?

Have not our records been polluted with false entries by a Recording Secretary and unauthorized interpolations made by another member; the first suffered to withdraw from the Society without being arraigned for the proper investigation of his conduct, and the other allowed to pass unnoticed?

Does not gratuitous swearing or rank perjury before courts of law, designed to screen a murderer from condign punishment, and blacken the characters and blast the fair reputation of honest and honorable members of the profession, go unpunished, unabated and unwhip'd of justice?

Have we not the degrading instance in this city of medical men, claiming to be respectable in the profession, conspiring to afford collusive testimony to the public tribunal, discreditable and damning even to themselves, with evident malicious design and dishonest intent to debase the Medical character of this community, injure individual reputations, pervert justice, rob the gallows and subvert the best moral principles of Society? Surely such monsters of depravity should be branded with the indelible marks of infamy and disgrace, excluded from the pale of civilized society, and rendered

"Fixed figures for the hand of scorn
To point her slow, unmoving finger at."

Have not justice slept and judgment slumbered in restless repose, and suffered selfish effrontery or pinching parsimony to defraud the society of its legitimate dues with impunity? Can we not discern green-eyed jealousy, envy, fastidious folly and disgusting arrogance disseminating their baneful influence amongst us?

Do not members of this Society designedly absent themselves and meanly skulk from our meetings for the purpose of preventing a quorum, hoping thereby to destroy the object and usefulness of our association? And do not these members seek to amalgamate themselves with our bitterest professional enemies, men rejected for their demerits, disappointed applicants for admission into our society, and vain, vindictive itinerants and egotistical characters called Professors of a self-generated, ill-begotten Semi-vital institution yclept "Medical School" somewhere in this vicinity,⁸ which, alike regardless of the common courtesy of Medical communities and destitute of professional decency and etiquette, obtruded itself into public notice like a swarm of ephemeral insects by the disgusting noise of its own creation in its sudden transit to decay and nothingness, and of whom we know little, but hear much of senseless vaunting and self-indited puffs, plaudits and fraternal adulation in newspapers and pamphlets, and personal gasconading garrulity in community?

His administration was evidently not successful in bringing harmony into the discordant assemblage, for the minutes record at meeting after meeting only the words, "no quorum."

The Darnes-Davis⁹ episode, in which Beaumont played a conspicuous role, and to which he doubtless refers in his address, was one in which Mr. Darnes, a respectable citizen of St. Louis, attacked Mr. Davis, editor of the *Argus*, beating him over the head with an iron cane. After consultation of three physicians, Beaumont trephined the skull and removed spiculae of bone. Shortly after the operation, which was performed without an anesthetic, Davis lapsed into unconsciousness and died a few days later. The trial of Mr. Darnes took place in November, 1840. The counsel for the defense contended that it was not certain whether Davis died from the blows upon the head or from the operation performed by Dr. Beaumont, and presented as witnesses three physicians, Drs. Lane, Knox, and White, who gave testimony to the effect that there were no symptoms calling for trephine, and that it was a serious operation and liable to fatal termination. It might be well to mention that none of these physicians saw the patient at any time, or were

⁸ Refers to the medical department of Kemper College, organized in 1839 by Dr. Joseph Nash McDowell, which became in later years the Missouri Medical College.

⁹ Missouri *Republican* files, November, 1840; "History of St. Louis," by Richard Edwards and M. Hopewell, M. D., 1860.

present at the operation. The attorneys maintained that the operation was another one of Beaumont's experiments, that he was "boring for symptoms," and facetiously suggested that he was known to be a man of great curiosity, and that he kept St. Martin's stomach open for the same reason that he bored into Davis' head—namely, to see what was going on within. After a tedious trial of two weeks the accused was found guilty of manslaughter in the fourth degree and fined \$500. In the meantime much animosity and ill-will had been engendered through the trial among the members of the medical profession. This soon found expression in another incident, known as the "Mary Dugan case."

In the record-room of the Circuit Court of St. Louis there are to be found well-preserved files¹⁰ of the case, entitled "Mary Dugan vs. William Beaumont and Stephan M. Adreon." It is an action of "trespass on the case," wherein the plaintiff claims damages in the sum of \$10,000 growing out of alleged malpractice on the part of the two defendants. The petition was filed on October 9, 1844, alleging that during May in the year of 1840 she was afflicted with a hernia, and that the defendants "did so ignorantly, negligently, and unskillfully treat and operate upon the body of the said plaintiff for the healing and curing of said disease. . . . and did then and there by means of said instruments cut into the abdomen of the said plaintiff and through and into one of the intestines of the said plaintiff." To these charges general denials were interposed, and, with the issues thus joined, the trial progressed. Trusten Polk, afterward governor of the state of Missouri, was Beaumont's attorney. It was charged by the defendants that certain physicians who "calculate their own success by others' downfall" had injected themselves into the case and had urged Mrs. Dugan to file suit. Dr. Beaumont said:

I was invited by Dr. Adreon to see Mary Dugan a few days after he, as her attending physician, had punctured a tumor and abscess in the right inguinal region; that I then and there examined it thoroughly, detected no hernia or vestige of hernia, but found an ugly sloughing abscess, with fistulous openings through the muscles into the abdomen, discharging offensive, fecal, purulent matter, clearly demonstrating to my mind at the time its real and definite character—"typhlo-enteritis," or perforative ulceration of the cecum.

The most intense feeling was manifested throughout the trial.

¹⁰ No. 179, St. Louis Circuit Court, November term, 1844.

There were subpoenaed by both the plaintiff and the defendants some of the most eminent physicians and surgeons then in practice in St. Louis, among whom were Charles A. Pope, Joseph Nash McDowell, Thomas S. Reyburn, William McPheeters, Hardage Lane, and others. The trial was hotly contested.

The jury rendered a verdict for the defendants, and thus, judicially at least, Beaumont and Adreon received a complete exoneration; but be it said for Dr. Beaumont that his connection with the Mary Dugan case, medically as well as legally, was entirely incidental. He was summoned in consultation, and therefore at no time could his legal liability for malpractice have been seriously entertained. In view of the facts as developed and the law, the conclusion is almost irresistible that Dr. Beaumont was made a party defendant to the legal proceedings in order to embarrass Dr. Adreon and weaken his defense, for at that time there was a rule of the common law disqualifying a party to the record from appearing as a witness. This conclusion is confirmed by Dr. Beaumont's own belief in the matter, as expressed in a letter to Dr. T. L. Reyburn, wherein he said: "I was not supposed to have been originally associated with Adreon in the suit, but subsequently included, no doubt, in the declaration to deprive the defense of my testimony before the court."

The verdict by no means closed the incident, for there then ensued an extensive war of words through the columns of the *St. Louis Medical and Surgical Journal* until its pages were closed to any further communications on the subject, whereupon supplements¹¹ were issued by the authors at their own expense.

In view of all this, it is not surprising that Dr. Beaumont should

¹¹ The first supplement was a complete, unsigned review of the case, in which was reproduced in full the testimony of various witnesses. This called forth the "Remarks of T. J. White, M. D., by way of vindication of himself from the aspersions and misrepresentations contained in the following extracts from a paper on typhlo-enteritis by Thomas Reyburn, M. D." In this article he reviewed the case from his own standpoint, and refers sarcastically to the "far-famed case of Missouri typhlo-enteritis" and the "Missouri typhlo-enterite, alias hernie." This was followed by "A supplement to the July number of the *St. Louis Medical and Surgical Journal*, by Thomas Reyburn, 1846." There then followed in rapid succession an "Appendix to the supplement to the July number of the *St. Louis Medical and Surgical Journal*, being Dr. Fourgeaud's reply to Dr. Reyburn's supposition;" "Dr. Reyburn's supplement to Dr. Fourgeaud's appendix, etc., being a reply to the lucubrations of Dr. Fourgeaud's fancy;" "Dr. Fourgeaud's second defense against the charges of Dr. Reyburn;" "Dr. Reyburn's remarks to the readers of Dr. Fourgeaud's second defense against the charges of Dr. Reyburn;" "A vindication of character and an examination of the accusation contained in Dr. T. Reyburn's supplement to the *St. Louis Medical and Surgical Journal*, by F. Knox, M. D.;" "A discussion of charges preferred in the Dugan controversy, being a reply to the publication of Dr. Franklin Knox;" "A vindication of character, etc., by S. W. Adreon;" "A discussion of the charges preferred in the Dugan controversy, with a demonstration of the facts in the case, by T. J. White, M. D.," etc.

have expressed himself so drastically concerning his professional brethren in response to a letter from his friend, Dr. McCall,¹² of Utica, who had extended Beaumont an invitation to attend the first meeting of a "national medical convention" on the first Tuesday of May (1846) in the city of New York. Dr. McCall wrote:

Your presence would give us all great pleasure, and add much to the interest of the convention, as well as promote the cause in which we are all engaged—that of doing good to our race. But you, dear sir, have already immortalized yourself.

Dr. Beaumont replied:

I wish it were compatible with my duties and disposition to accept your courteous invitation to attend your Medical Convention at the City of New York next month. I should most cheerfully and readily contribute my mite for the promotion of the object in view, "the good of our race," and gladly add pleasure and interest to the assemblage on that occasion; but you will probably have more than enough from this section of country without me to create and keep up conflicting interest and excitements of various kinds. We are a great people out here in this "far West," and have several would-be most astonishingly eminent M. D.'s and Professors of every grade and character, from the truly meritorious, accomplished, and skillful surgeons and Physicians to the veryest charlatan and ignorant asses in Christendom, and a heavy delegation has been elected in this city recently to attend your Convention. I believe some 15 or 20, or more, were elected to represent the faculty of this city. Perhaps they will not attend "in propria persona," but you will doubtless have a specimen of the variety of professional talent and disposition of our medical community; the honorable high-minded and nobly aspiring young minds, radiant with vanity, but not deficient in sound sense and professional skill and acquirements; the invidious, jealous and obsolescent minds; the egregiously egotistical and ignorant blockheads and dunces; some mean and vindictive, and others on a descending scale even down to the very bottom of baseness and rascality. I presume these will not all be there, but you can readily designate with sufficient accuracy these different charac-

¹²Dr. John McCall was at this time engaged in the practice of medicine in Utica, N. Y. He had been a fellow-surgeon with Beaumont in the War of 1812, assigned to duty in the Thirtieth Regiment of Infantry. ("Memorial History of Utica, N. Y.," by M. M. Bagg, M. D.) There exists among the Beaumont papers an extensive correspondence between these two staunch friends during 1845-46. Dr. McCall was an intimate friend of George and William Combe, and through them he was in constant touch with their brother, Sir Andrew Combe, the physiologist. Dr. McCall had observed in the preface to Combe's fifth edition of "The Physiology of Digestion" reference to the "very valuable work of the late Dr. Beaumont." He immediately wrote to ascertain whether Dr. Beaumont had left his "service in this country and gone to that other one from whose bourne no traveller returns." Upon receiving satisfactory evidence that Dr. Beaumont was "alive and live-like to be," he informed Dr. Combe, who replied: "Most heartily glad was I to find Dr. Beaumont still a living and active man after having so ceremoniously slain him in the last edition of my Digestion." The entire correspondence beams with the good fellowship of congenial souls. I regret that I cannot give space to more of it.

ters and dispositions by merely asking a few questions about me; their answers will indicate the meanness or magnanimity of their souls, if they have any.

It must not be thought that during all these years Beaumont had lost interest in St. Martin's "notable stomach," although he had not been able to put his hands on the man. Both his own ambition to finish the work which he had begun and the continued interest manifested by other investigators in the further possibilities offered by Alexis' case spurred him on to still greater efforts to get possession of him. Inquiries were being made from every quarter as to the whereabouts of his protege. English physicians had been especially active in their efforts to have him come to England. Sir Andrew Combe had suggested in his second edition of the "Physiology of Digestion" that the Royal Society or the British Association should make efforts to have St. Martin brought to England, to be investigated by a committee of their number. The suggestion was acted upon by the Medical Section of the British Association at Newcastle in August, 1839, when "A Chemico-Medical Committee, consisting of Dr. Thompson, Dr. Prout, Dr. Graham, and Professor Owen, was appointed and authorized to apply to the General Committee for a grant of £200 from the funds of the Association to enable the Chemical Section to bring over to this country and retain for one year Alexis St. Martin for the purpose of making physiological and chemical researches on the subject of digestion in connection with the Medical Section. But the application was refused by a noble member on the ground that the subject was coarse and indelicate, and calculated to disgust, and the grant was refused."¹³ In the following year, when the association met at Birmingham, the subject was again under discussion, and Dr. W. Gibson, of Philadelphia, who was in attendance, was requested to use his best offices in its behalf. Professor Gibson announced this fact in one of his lectures, whereupon young Johnson, who had been a pupil of Beaumont and was now studying medicine at the University of Pennsylvania, warned Dr. Beaumont to "be watchful, or those wiley Englishmen will slip him over to London before you are aware of it."

In June, 1840, Dr. R. T. Thompson, of London, wrote to Dr. Silliman for information concerning Beaumont and his protege,

¹³ Edinburgh *Medical and Surgical Journal*, vol. LII, 1839, cit. S. C. Ayres, M. D., in "A Review of Dr. William Beaumont's Experiments on Alexis St. Martin."

inquiring whether it was likely that St. Martin could be prevailed upon to come to England, and, if not, whether fluid contents of his stomach could be forwarded to him, adding:

. . . But if I could have the patient himself beside me for a year, I think something of importance might be made out. In arranging the matter with him, it would be necessary to give him a bribe, which, I have little doubt, might be obtained from the association, could we rid ourselves of the aristocrated incubus which assails us at present.

He suggested that, if necessary, the means could be obtained by public subscription. Professor Silliman, in forwarding the request to Dr. Beaumont, suggested that the doctor accompany St. Martin as his protector and the expounder of his case. Beaumont evidently thought well of the suggestion, and at once got into communication again with his mediator in Canada, Mr. Morrison, informing him of the demands that were being made both by foreign and domestic institutions, and that he was, therefore, exceedingly anxious to have Alexis "with or without his family" for the purpose of traveling with him in Europe. He agreed to pay him a good salary, and at the same time to advance sufficient funds to enable him to leave his family comfortable in Canada. Alexis evidently evaded the issue on this occasion, as had been his custom in the past, and was not heard from again until three years later, when, in need of funds, he wrote the Doctor one of his characteristic friendly letters. It is a fair example of those received from time to time, written at his dictation, ostensibly prompted by his interest in the welfare of the Beaumont family, but in reality with a more subtle object, revealed here in the last line.

ST. THOMAS, May 24th, 1843.

Doctr. William Beaumont.

MY DEAR SIR: I have written Several Letters and Recd. No answer. This is to let you know that I am in very Good health at Present, and I hope this will find you the Same. I beg the favor of your answer on the receipt of this, and let Me Know if you want Me, and Can Give Me the Same Engagement that I had before. Perhaps I May Come and Stop with you, but at all Events I want you to write and let Me Know how you are and your family. I thought you had for got Me, and I got No answer to the letter I wrote you. At any Rate, I have Not forgot you. I have had Some Sickness in My family, and lost two of My Children, and was unwell Myself for the Best Part of a year. My wife has Been very lonesome Since we left your Place. My wife joins Me in Sending our Best Respects to you and your wife. I have had offers from other Doctors



Alexis St. Martin at about the age of 67 years. (From a photograph presented to Austin Flint, Jr., by C. G. Stanley, M. D., in May, 1871. Courtesy of Dr. H. M. Whelpley.)

to live with them, but I would not except without letting you know. Money here is very Scarce.

Yours very truly,

ALEXANDER ST. MARTIN.

Again, in 1846, Dr. Beaumont began negotiations to obtain St. Martin. Among his papers were found a series of not less than sixty letters during the years 1846, '50, '51, and '52 bearing solely on this subject, the last one six months before his death. Space will not permit a complete presentation of this correspondence, but a synopsis of it is not only of great interest from an historical standpoint, but important as revealing the great zeal and industry with which he pursued the subject even in his advanced years.

He had learned through Mr. Crooks some time before that "Alexis had become such an abandoned drunkard" that he could not be trusted with money, and that it would be useless to try to get him to St. Louis unless it were possible to send some one after him. He therefore wrote Mr. Morrison (February 7, 1846), asking him to again locate Alexis, and to endeavor to send him on to St. Louis with some one who might be making the trip. Mr. Morrison replied that he had located Alexis living in the next parish, that he felt inclined to return, and that he had changed much in his habits of drinking, though he had not become a "teetotaler." On receipt of this information the Doctor wrote "Monsr. Alexis St. Martin," beseeching him to come on at the earliest possible moment, leaving his family in Canada. He congratulated him on the moral improvement of his life and habits, and urged him to continue in this path in order that he might be "duly rewarded by God and man."

In the meantime he received a communication from his cousin Samuel, proposing to leave Plattsburg and come to St. Louis with a view to locating and practicing here. Dr. Beaumont saw in this move not only a sure way of having Alexis brought on to St. Louis, but an opportunity to carry on his investigations with the aid of his cousin. He wrote him, urging him to carry out his intentions, but to first go into Canada and bring Alexis with him, "dead or alive, with or without all of his live stock." He was again doomed to disappointment, however, for his cousin, evidently a man of little determination, failed to carry out his original intention.

About this time he received from Alexis another letter, dated April 25, 1846, stating that he could not come without his family,

and appealed to Dr. Beaumont's paternal instinct in these words: "You, who are a married man and a father, can easily conceive how very difficult it is for me to tear myself forcibly away from here without a reason for so doing." Driven to extreme methods, and determined not to be hampered by Alexis' family, now consisting of a wife and five children, he decided to send his son into Canada, and at the same time wrote Alexis (May 29, 1846):

Now, Alexis, it is unnecessary to go into any discussion about your family, or enumerate the repeated instances of disappointment that have heretofore occurred on this account. I am sorry you now propose the same embarrassment again as a condition to your compliance with my wishes. You know for what I wanted you then, and the reasons for the arrangements made to leave your family with their friends and relatives in Canada while you came here with me for an expressed purpose. You know the embarrassment and interruption that have occurred heretofore to the prosecution of my experiments upon you on account of having your family with you. . . . At Prairie du Chien, in 1832, you know your wife became so discontented and determined to go back that you were obliged to yield to her and disappoint me. . . . I can conceive no difficulty, unreasonableness, or cruelty in leaving your family comfortably situated and provided for with their friends for the short space of a year or two, while you came to fulfill your obligations to me faithfully and honestly. . . .

But I cannot again voluntarily subject myself to defeat and disappointment by advancing more money before I am sure of your personal presence here, and positive surrender of your services in fulfilment of your engagement, unincumbered by any drawback upon your time or interruption of my observations and experiments upon you. . . . I will say no more, Alexis. You know my wishes and the object I have in view. You have been with me before, and can judge of my disposition to do justly and liberally by you. I believe you have never been dissatisfied with what I have done for you, and I think you never will be. Israel, my son, will be with you some time in the month of June for the express purpose of accompanying you on here, to defray your necessary expenses, etc. You must come, Alexis, with Israel. Yrs. in friendship and good will,

WM. BEAUMONT.

Alexis replied flatly that he would not leave his family, and now assumed an attitude of bluff, believing that this method would bring his benefactor to time, and wrote in the following vein:

I am happy where I am. I can earn sufficient to support them here. Money is of no object to me alone. My only wish is to see my family satisfied. . . . Several medical men of Montreal have asked me to hire to them for that purpose, but I did not decide, as I preferred coming to

you. If I do not hear from you again, I intend to spend the next year in town for that purpose.

In the meantime "Buddy" had already started on his mission, and proceeded as far as New York city with Colonel Hitchcock, who had been resting at the Beaumont home while under the treatment of the Doctor. In his usual methodical way, he gave his son written instructions for his guidance.

MY SON: You are now about to start on an excursion, not only for pleasure and amusement, but for the improvement of your mind and manners, the acquirements of a knowledge and right understanding of men, to see the transactions of business, and to witness the ways of the world in general, accompanied by a man of worth and wisdom, whose counsels and advice cannot fail to guide you correctly while with him and absent from your parents. You will, therefore, listen to his advice and give ear to his counsels. Should you separate from him before you return home, take counsel from him and follow his instructions.

Beware of forming new and strange acquaintances. Be affable to all, but intimate with no transient ones. Be not suspicious of everybody, but circumspect, reserved, discerning in all your travelling intercourse; commit yourself to no one. Be discreet and prudent in everything. Take special care of your health, avoid unnecessary exposures, errors in diet, vicious indulgences and immoral associations of every kind. Scan closely, reflect materially, appreciate attentively everything that may come within the sphere of your observation. Be constantly on your guard against impostors, humbugs, pickpockets, dandies, knaves and fools, the wickedness of men and the wyles of woman; engage in no adventures. . . . If Alexis concludes to come without his family on the terms and conditions heretofore suggested in my letter to Mr. Morrison, to which reference may be had in the want of an agreement, Dr. Saml. Beaumont will fix it for you. You are not to let him wheedle you out of any more advances of money than what may be indispensibly necessary for his personal comfort and convenience in coming on here. You will take him in charge as a private Servant in travelling. Keep him in his place, and strictly control his time and services. Allow no undue familiarity, or suffer him to take the slightest advantage of your age and inexperience. . . . If he should become obstinate and refractory, and give you much trouble in getting him along, stop his travelling expense and discharge him at once, and let him work his passage back or forward as he may choose, and proceed on without him. Have some such written agreement made with him before you leave Plattsburgh that you may rid yourself of him if you choose, even on the way, without giving him anything to help himself with. . . .

A month elapsed before he received any news from the important expedition he had sent into Canada, and this news was of a most



General Ethan Allen Hitchcock and Israel Green (Buddy) Beaumont. (From a daguerreotype in possession of Mrs. Sarah Beaumont Keim.)

" . . . accompanied by a man of worth and wisdom, whose counsels and advice can not fail to guide you correctly while with him and absent from your parents."

disappointing nature. In a letter from Troy, N. Y., Buddy informed his father of the visit to Alexis, how and where he found him, of his evasive methods, and finally of his determination to remain in Canada. He gave an amusing account of Alexis and his wife and children in the French cabin, the door of which was so low that he bumped his head on entering. Disappointed and disgusted with this experience, the Doctor determined, for a time at least, to waste no more energy on the slippery Alexis.

In the early part of this year Mr. Chauncey Goodrich, a publisher of Burlington, had written Beaumont, proposing the publication of a new edition of his work, which he was willing to undertake, agreeing to set aside for the author a certain number of books of each thousand printed, to which Dr. Beaumont replied:

Being somewhat diffident as to the merits of my own work, and being entirely unacquainted with the principles and usages of the trade, I do not conceive myself competent to judge of the propriety, public benefits or pecuniary advantages to be derived from affirming your proposals, and shall therefore refer you to my cousin, Dr. Samuel Beaumont, of Plattsburgh, N. Y., who will be duly authorized to make the necessary arrangements with you on the subject.

Samuel was simultaneously advised of this offer and the reply, and was urged to take up the matter in person with Mr. Goodrich at Burlington. On March 16th he wrote that he had seen Goodrich, and, after much parleying, had finally agreed on terms—namely, that the author was to receive two hundred copies of an edition of fifteen hundred books—and continued:

I then thought, and I still think, it was not enough, but it was all I could get. In making up my mind, the following considerations presented themselves: First, that the copyright would expire in one year, and he would then have the right to print it without consulting the author; second, that it would be somewhat mortifying to the author not to have his work republished, even if no great pecuniary benefit was to be obtained by such a publication, and it appeared to me to be quite certain that a new edition would not be soon printed if I let this opportunity slip; third, I have been long anxious, as I presume you have been, to see the work gotten up in a better dress than it originally had, and in a way which will give it a general credit and more notoriety among all classes of the reading public than it has heretofore possessed—in fact, make it a standard work; fourth, it has given us a chance to give it a thorough correction, a thing which was very desirable. The work, you recollect, was got up in a hurry, and a great many errors escaped notice. You may also recollect that the Philadelphia reviewer spoke of the inaccuracies in the

work, and he had reason enough for it. In looking over the work critically with a view of correction, I have been perfectly astonished at the errors that occur on almost every page; and although we understood perfectly what we meant to say, the reader would find it somewhat difficult to decipher our meaning. In the first 140 pages I made nearly 300 corrections. These are practically merely verbal alterations, or change of phrases or sentences, so as to make them more accurate or perspicuous. I have in no case so changed the text as to give it a different meaning. I flatter myself that it will now be more worthy the public patronage; and if for no other, this chance for correction I consider alone almost a sufficient remuneration for the brief limits of the copyright. I have also written a preface to the second edition, making quotations from American and European authorities in praise of the merits of the work. From delicacy I have written this as from the publisher. I think it pretty well done. The work will probably be published in the course of about a month, and those designed for you will be delivered to me, when I shall send them to you. He guarantees not to sell in the state of Missouri, or the states south and west of that state. But that, of course, is all gammon. The book will be thrown into the market, and he can not control the direction in which it will go.

Considerable time elapsed, and, hearing nothing more of this project, Beaumont made inquiry of his cousin as to whether anything further had been done in the matter, to which he received a reply (November 8, 1847), informing him that the new edition had appeared during the month of May previous, that he had received a few copies, and a promise from Mr. Goodrich that he would send on the balance to St. Louis, and added:

Whether he did so or not, I do not know, as I have not seen or heard of him since, nor received another copy. I am afraid he is a great scamp, and intends to cheat us out of the small pittance which he promised. I hope, however, he has sent you the fifty copies as he promised. The work has much more of a book-like appearance than the first edition—is well printed and well bound. He has taken a liberty, however, with the title page, which I should never have consented to if I had been consulted, by introducing the words, "Corrected by S. Beaumont, M. D.," a discovery I did not make until it was too late to remedy. I did, indeed, write to him, begging him that he would suppress the title page and print a new one without my name, but I never received an answer from him. I suppose, however, it is a matter of very little importance, as the public, if they think of it at all, will think that you were absent from the place of publication and that you entrusted the verbal correction to your friend.

A period of four years were permitted to elapse before Beaumont made any further overtures to his "human test tube," and he would probably not have found heart to do so on this occasion had

he not received, early in 1850, a new impetus through a letter from Dr. W. G. Edwards,¹⁴ from Paris, written at the request of M. Claude Bernard, a famous French physiologist:

The publication of your observation, exposing so clearly and analytically the physiology of the stomach, was the commencement of a new era in the study of this important organ and those associated with it. Your experiments are constantly imitated here upon animals by a large number of investigating physiologists, among whom M. Bernard probably stands first. His discoveries, of which you have doubtless heard, have rendered the functions of the pancreas, liver, etc., as clear as yours did those of the stomach, but his observations have necessarily been limited to animals, and in the absence of yours upon man would lose much of their value, since no other evidence exists of the identity of the process of digestion in man and the lower animals.

The animals upon which he operates generally sustain no serious injury from the experiments to which they are subjected, and after the fistulas are healed seem to enjoy as good health as before their establishment or during their existence.

He feels some interest in knowing the subsequent history of Martin, and requested me to write you, inquiring whether you had kept sight of him, what is the nature of his occupation, his health, etc., if he is still living, with such other information concerning him not contained in your publication as you may think fit to communicate. By replying briefly to these inquiries, you will afford M. B. a great deal of pleasure and confer a great favor upon myself.

To this Dr. Beaumont replied:

To comply with your request affords me pleasure, and I shall be happy in gratifying M. Bernard if such be the effect of this communication. Mingled emotions of gratification and regret, of pleasure and chagrin fill my breast at the suggestion of the kindly credited approbation and importance that my imperfect experiments have been or may be to the truly scientific investigators of that most essential of all hygienic subjects, the physiology of digestion; pleasure and gratification that my feebly imperfect efforts shall have added even in a small degree to the benefits of science, chagrin and regret that the opportunity has been so unworthy the credit and commendation awarded. But I still entertain hope that the future efforts and opportunities may yet enable me, or others more capable than myself, to retrieve, in a measure, the neglected opportunity and my own former inefficiency.

¹⁴Dr. Willis Green Edwards had practiced medicine in Illinois for a number of years. He was an ambitious young man, with much professional pride and a desire to further his scientific attainments. He had long been desirous of studying in Paris, and as soon as he had sufficient means went abroad. While there he developed tuberculosis, but, in spite of this, returned to St. Louis and taught for a year in Pope's College. He had a sudden hemorrhage, which necessitated his discontinuing the work, when he fitted out a carry-all, in which he lived in Old Mexico until he died in 1862.

He then told him the details of Alexis' condition, something of his character, of his family "gotten and begotten" since his recovery from his injury, how he had "lurched" him in 1835, and of the vain efforts to gain possession of him again.

The interest manifested by M. Bernard evidently rekindled the old spark of ambition and zeal, and prompted him to reopen a correspondence with Mr. Morrison. He soon learned from him that Alexis was now ready to come on with his family for a consideration of \$250 per year, \$150 of which was to be sent in advance for their transportation; that he was "now a teetotaler," and could be relied upon. To this the Doctor replied that he was willing to make the salary even \$300 per year, but that he still questioned the advisability of sending him money in advance; yet, if his coming could not be accomplished in any other manner, he "must do so at the treble risk of mail robberies, post office abstractions, malapplication of the money obtained," etc. So certain did he feel this time of Alexis' presence that he made arrangements with the medical college to present a course of lectures and a resume of his physiological experiments on the gastric functions. A month later, however, when he thought Alexis well on his way, he learned that he had disappeared from home before arrangements could be completed, that they had been expecting his return daily, but were now apprehensive that something had happened to him. When news was again received of Alexis (January 1, 1851), it was to the effect that he had finally returned, that preparations had been made for his departure, but he had fallen sick and could not proceed. Mr. Morrison now believed the man's constitution ruined, and doubted whether he would ever be well enough to make the journey. This news did not, however, deter the Doctor from making further overtures to Alexis. He wrote:

I hope you may come yet, not only for my gratification, but for your own benefit and the sake of science, notwithstanding the discouraging aspects contained in Mr. Morrison's last letter of your present illness and impaired constitution. Were you now or should you be under my care and protection, I would feel the same and even greater interest and make greater exertions to restore your health, preserve your life, and perpetuate your own and family's comfort and prosperity as when you were first injured in 1822 to '34. I preserved you then, and I doubt not I could do it again to your own satisfaction and greater usefulness to mankind.

After exchanging several letters, Beaumont had practically de-

cided to go himself "in propria persona and bring him," when he received word that Alexis was ready to start at once, and would certainly not fail this time. In reply to this a telegram was immediately sent (October 23d):

Yours of the 6th received. Send Alexis at once. Advance for me. I'll remit \$100 per mail.

Alexis, on the plea of having to clothe his naked children, again procrastinated until winter was upon them and navigation closed. With the opening of navigation in the spring, the usual correspondence was begun. In the meantime Beaumont was again endeavoring to get his own affairs into such a shape that he could go into Canada in person, but professional duties made this practically impossible. As a last resort he made a new and more flattering offer in what proved to be his final appeal to Alexis:

MON AMI: Without reference to past efforts and disappointments, or expectations of ever obtaining your service again for the purpose of experiments, etc., upon the proposal and conditions heretofore made and suggested, I now proffer to you in faith and sincerity new, and I hope satisfactory, terms and conditions to ensure your prompt and faithful compliance with my most fervent desire to have you again with me, not only for my own individual gratification and the benefits of medical science, but also for your own and family's present good and future welfare.

I should be extremely glad to see you here this winter, and I am sure neither you nor your family would ever regret it. I believe I have suggested to you before the probability and almost sure practicability of obtaining for you either a pension, bounty or warrant for Land, 80 or 160 acres, from our Government, to which you would be entitled were you resident in the States.¹⁵ I have scarcely a doubt but that you could obtain it from Congress the ensuing session, were you here to put in your petition in time. I could effect for your benefit what very few, or none others, could do for you. I have influential friends in Congress, who would take special interest in this your case. You could not obtain anything of the kind while in Canada, nor in any other way than by my agency, the only medium through which your claim could be made out and substantiated.

Alexis, you know what I have done for you many years since; what I have been trying and am still anxious and wishing to do with and for you; what efforts, anxieties, anticipations and disappointments I have suffered from your nonfulfilment of my expectations. Dont disappoint me more, nor forfeit the bounties and blessings reserved for you.

Dr. Samuel Beaumont had in the meantime been making efforts

¹⁵ Congress at its last session had passed a law granting officers and soldiers of the army a bounty of 80 or 160 acres of land. Dr. Beaumont had entered his claim for 160.

at Plattsburgh to have Alexis come on to St. Louis, and had written of his failure. Dr. Beaumont replied to him on October 20, 1852:

Yrs., My dear Cousin, of 30th ulto. on the subject of that "old fistulous Alexis" was duly received. . . . I have evaded his designs so far, but I verily fear that the strong and increasing impulse of conscious conviction of the great benefits and important usefulness of further and more accurate physiological investigations of the subject will compel me to still further efforts and sacrifices to obtain him. Physiological authors and most able writers on dietetics and gastric functions generally demand it of me in trumpet tones.

I must have it at all hazards, and obtain the necessary assistance to my individual and private efforts, or transfer him to some competent scientific institution for thorough investigation and report. I must retrieve my past ignorance, imbecility and professional remissness of a quarter of a century, or more, by double diligence, intense study and untiring applications of soul and body to the subject before I die.

"Should posthumous Time retain my name,
Let historic truths declare my fame."

Simultaneous with this letter I write to Mr. Morrison and Alexis my last and final¹⁰ letters, perhaps, proposing to him, as a bribe to his cupidity, to give him \$500 to come to me without his family for one year—\$300 of them for his salary and \$200 for the support and contentment of his family to remain in Canada in the mean-time, with the privilege of bringing them on here another year, upon my former proposition of \$300 a year, at his own expenses and responsibility, and support them himself after they get here out of his \$300 salary. I think he will take the bait and come on this fall; and when I get him alone again into my keeping and engagement, I will take good care to control him as I please.

Proposals have been suggested by the Professors of the Medical School here to take up and prosecute the experiments under their auspices, and I think I may carry it into effect if I get him, if they will back the expenses pretty liberally and obligate not to flch undue credit from my labors past or to come. . . .

There is an immense professional practice in this City. I got tired of it, and have been trying hard to withdraw from it altogether, but the more I try the tighter I seem to be held to it by the people. I am actually persecuted, worried and almost worn out with valitudinarian importunity and Hypochondryal groans, repinings and lamentations. Amen.

In 1849 Dr. Beaumont removed to the city, his home being at that time beyond the city limits, because of the increasing demands on his time and the difficulty of meeting them in his advanced years; then, too, his daughters had married and all the

¹⁰ Strangely this proved to be, as he predicted, his final letter on this subject.

children were now away from home. During this spring "that scourge of saint and sinner, the cholera," had made its appearance, having been carried here from New Orleans, and found soil in the existing unsanitary conditions of St. Louis. The disease spread rapidly, and within a period of four months over four thousand had succumbed to its ravages. Though now three score and four years, he toiled incessantly day and night throughout the epidemic with the zeal, courage, and fortitude of youth. Toward the end



A monument near the old quarters of the officers at Fort Mackinac, bearing the inscription: "Near this spot Dr. William Beaumont, U. S. A., made those experiments upon St. Martin which brought fame to himself and honor to American medicine. Erected by the Upper Peninsular and Michigan State medical societies, June 10, 1900."

of the siege he wrote to a friend in the North, at his request, outlining in detail the treatment of each stage of the disease which he had found most successful, and, in concluding his advice, he added:

. . . But if the subject have passed the verge into the cold, blue stage of collapse, every medical means, skill, or human effort seem entirely impotent of relief, and worse than useless. Death triumphs with perfect ease and tranquillity. Relatives and friends shriek with sorrowful emotions, and doctors stand aghast in mute astonishment and mortifica-

tion at the resistless rapidity of a disease so little understood and over which their most profound skill and judgment and professional efforts can have no salutary influence or effect. . . . In several instances I have been called, only to witness the death struggle in the onset. All attempts at interference were equally ineffectual and useless. A sudden and desperate wrestle between life and death, nature and disease, a trip and a twitch, and death was the triumphant conqueror. May God avert the fell disease from your community, and spare you all individually and professionally from the agonizing pain, distress and consternation of its visitation. . . .

The three succeeding and final years found him still devoted to his family, his friends, and his work. No better estimate of his well-rounded character can be formulated than that presented by two contemporaries, who knew him intimately during these latter years. The following is quoted by Dr. Reyburn:

Dr. Beaumont possessed great firmness and determination of purpose; difficulties which would have discouraged most men, he never allowed to turn him from his course. These he did not attempt to evade, but to meet and overcome. He possessed more than any man I ever knew a knowledge (almost intuitive) of human character. You might have introduced him to twenty different persons in a day, all strangers to him, and he would have given you an accurate estimate of the character of each, his peculiar traits, disposition, etc., and not a few would receive some appropriate soubriquet from him. He was gifted with strong natural powers, which, working upon an extensive experience in life, resulted in a species of natural sagacity, which, as I suppose, was something peculiar to him, and not to be attained by any course of study. His temperament was ardent, but never got the better of his instructed and disciplined judgment, and, whenever or however employed, he always adopted the most judicious means of attaining ends that were always honorable. In the sick-room he was a model of patience and kindness; his intuitive perceptions, guiding a pure benevolence, never failed to inspire confidence, and thus he belonged to that class of physicians whose very presence affords nature a sensible relief.

Such a man could view the approaching infirmities of old age with that calmness and satisfaction that characterizes a long life well spent, and so he did. His supreme satisfaction with life and his perfect readiness for death he expressed beautifully in a short "symphony" to a friend a few months before his death:

Myself and wife, not unlike "John Anderson, my Jo," have climbed the hill o' life together, and many a canty day we've had wi' ane anither. But now we maun totter down life's ebbing wane in peaceful quiet ease and compitence, with just so much selfishness and social sympathy as to be

satisfied with ourselves, our children, and friends, caring little for the formalities, follies, and fashions of the present age, the bustling turmoils, vain shows, pride and pageantry of modern Society, or the jealousies and envy of mean or malicious, sure of rectitude of purpose and unconscious of wrong intentions to the injury of any human being, boastful of nothing, cheerfully submissive to the duress of fate, the freaks of fortune, or the



Tombstones at the graves of Dr. and Mrs. Beaumont in Bellefontaine Cemetery, St. Louis, Mo.

last flat of nature. Come when it may, we only ask God's blessings on our "frosty brows," and hand in hand we'll go and sleep together.

In March, 1853, while returning home from a visit to a patient late in the evening, he slipped on ice-covered stone steps, striking his head with violence as he fell, and, with senses benumbed by the fall, wandered about until met by a friend, who accompanied him to his home. Though his injuries were considered slight at the time, he,

never completely recovered from the fall. He prophesied at the very outset that the injury would end either in paralysis or death, and his prayer was that it might be death outright. He proceeded, therefore, with the aid of his son, to adjust with careful exactitude all unsettled matters in his professional and domestic life. His immediate family and friends endeavored to dissuade him from overtaxing his strength, but his reply was clear and decisive, and entirely characteristic: "Don't say a word about my health or strength; both will hold out as long as I shall need them. Now we must work, not bemoan." A few weeks later he developed a carbuncle on his neck, accompanied by an intractable fever, and on April 25th he died.

His good wife, Deborah, survived him by many years, and died on January 23, 1870. Together they lie buried in beautiful Bellefontaine Cemetery in the city of St. Louis, with modest marble slabs to mark their resting place. Few are the pilgrimages to his grave, and few there are who even know where lie the remains of this unique and remarkable man; yet all mankind has profited by virtue of his having lived and worked.

APPENDIX.

ALEXIS ST. MARTIN'S LAST DAYS.

St. Martin lived twenty-eight years after the death of his benefactor, but nothing further was accomplished in the nature of experiments save some unimportant tests by Francis Gurney Smith, professor of the Institute of Medicine in the Medical Department of Pennsylvania College, with the aid of Professor R. E. Rodgers (*Medical Examiner*, July, 1856). Among other conclusions reached by them was the erroneous one that, if hydrochloric acid is at all present in the gastric juice, it is in very small quantities, and that the main agent in producing the characteristic reaction is lactic acid. It seems Alexis was at this time exhibiting himself at different medical schools in the East, and was also reported at Buffalo about this time.

In 1870 he and his family were living in Cavendish, Vt., where he was earning his livelihood by "chopping wood by the cord." Though four of his children were married, they were all living with him in abject poverty. During this year he was in frequent correspondence with Israel Green Beaumont, and usually concerning the important topic of money. In addition to this, however, in every letter he lamented the death of Mrs. Beaumont, informed Israel that he regarded him as a son, gave him advice as to the rearing of his children, etc. In 1879 he returned to St. Thomas de Joliette in Canada, where he passed his last days in poverty. He wrote to Israel:

. . . I am beginning to get old, and I have been ill for six years, and I will not hide from you that I am very poor. In losing your father I lost much, for every year he gave me some money, and that helped me a great deal in my poverty. Therefore I call myself to your attention, and ask you to be so kind as to continue the favors of your father, whom I regret very much. I am suffering a little from my gastric fistula, and my digestion grows worse than ever, so that in granting me your charity, in order to carry on the traditions of your father, you will not thereby be inconvenienced for long, as I am old and sick. . . .

For further information concerning Alexis' last days and his death we are indebted to Sir William Osler, who in the spring of



Alexis St. Martin at the age of 81 years. (From a photograph presented to Sir William Osler.)

"Poor Martin! I am glad he is still living, and hope will live as long as Methusaleh did, and that thro his stomach we learn to see and regulate the conduct of our own precious, yet abused, stomachs. . . . He, too, is destined to immortality. But perhaps he may, after all, have less longing in that line than some others of the race. He is indebted to his stomach for his earthly immortality, while others are to their good deeds and self-sacrifice in the cause of humanity and of science." (Letter from Dr. John McCall, 1846.)

1880, while still a resident of Montreal, learned of St. Martin's death, and endeavored to obtain permission for an autopsy, offering a fair price for the stomach, to be placed in the Army Medical Museum in Washington. He was unsuccessful in this, but received the following interesting information through a friend, together with Alexis' photograph taken at 81 years of age:

I have much pleasure today in placing in your hands such information about St. Martin as Rev. Mr. Chicoine, curé of St. Thomas, has just handed over to me. Alexis Bidigan, dit St. Martin, died at St. Thomas de Joliette on June 24, 1880, and was buried in the cemetery of the parish on the 28th of the same month. The last sacraments of the Catholic church were ministered to him by Rev. Curé Chicoine, who also attended at his burial service. The body was then in such an advanced stage of decomposition that it could not be admitted into the church, but had to be left outside during the funeral service. The family resisted all requests—most pressing as they were—on the part of the members of the medical profession for an autopsy, and also kept the body at home much longer than usual and during a hot spell of weather, so as to allow decomposition to set in and baffle, as they thought, the doctors of the surrounding country and others. They had also the grave dug eight feet below the surface of the ground in order to prevent any attempt at a resurrection. When he died, St. Martin was 83 years of age, and left a widow, whose maiden name was Marie Jolly.

LITERATURE REFERENCES AND ABSTRACTS OF CASES OF GASTRIC FISTULÆ PRIOR TO THAT OF ST. MARTIN.¹

Von Grafenberg Schenckius, Johann, 1600—*De vulneribus ventriculj observationum medicarum*. Francofurti, lib. III, obs. 121, pp. 621, 622.

Covillard, Joseph, 1639—*Un ulcere fistuleux penetrant dans le ventricule*. *Observations iatro-chirurgiques*. Lyon, obs. 41, pp. 104–107.

Relates the case of a soldier who received a wound in the upper and lateral part of the epigastrium, through which his aliment issued. His surgeons, by means of tents, enabled him to retain food, and by degrees he recovered his health; but the wound of the stomach never closed, and he was constantly obliged to make use of a silver plug. Covillard had him take out this plug in the presence of several medical men, and they saw about a spoonful of an imperfectly digested chylous substance issue from the fistulous opening; after this he swallowed a glass of wine, which was immediately discharged through the same passage. In other respects the man had the appearance of being in perfect health. (Clt. Burrowes.)

¹ Some of the original articles from which these references were taken were not accessible to me, and therefore all of them have not been verified.

Mentzelius, C., 1687—*De vulnere ventriculi ultra undecim annos aperto, superstitie viro.* Misc. Acad. nat. curios., 1868, Norimb., decur. 2, v. 5, obs. 1, 1 pl., pp. 1-3.

Wencker, Christianus, 1734—*Diss. sistens virginis per viginti septem annos ventriculum perforatum alentis historiam et sectionem.* Argentorati.²

Wencker, Augustus, 1735—*Diss. sistens observationem rariorem de virgine, ventriculum per viginti tres annos perforatum alente.* Diss. Argentorati.²

Marguerite Elguerin, admitted to Hospital Norlingenn, had a fistulous opening in the stomach, from which food escaped. At the age of 15, during her first menstrual troubles, she developed pain in the left hypochondrium and left breast. An opening was made in 1708, allowing much pus to escape. One day, in 1712, when she was 19, while lifting something on a long fork (pitchfork), there was a rupture, with discharge of pus, blood, and food. The fistulous opening in the left hypochondrium was small; food and drink flowed from the opening. She grew so weak that she was obliged to go to bed. Eating was followed by violent cardialgia, which caused her to expel the food before it was changed to chyme; then fresh hunger set in, and so on. At the age of 41, in 1734, this woman ceased to have any menstrual flow. In a year she grew much worse, and was seen again in 1739, when she had frequent active colics. Hectic fever set in, and she died in August, aged 47 years. Autopsy showed stomach of ordinary size. Near the level of the greater curvature was found an opening whose margin was firmly adherent with the external opening and with the abdominal walls. (Cit. Gooch.)

Louis, 1768—*Sur la consolidation des playes avec perte de substance.* Mem. Acad. roy. de chir., Par., vol. IV, pp. 106-140.

Nebel, D. W., 1782—*De ulcere prope umbilicum sinuoso, in ventriculum penetrante ex quo alimenta effuebant.* Diss. 40. Heidelbergae.

Burrowes, G., 1794—*Account of a fistulous opening in the stomach.* Med. Facts and Obs., Lond., vol. V, pp. 185-190.

An inferior officer in the service of the East India Company received in a voyage to India a wound in the abdomen, between the cartilage of the eighth rib on the right side and the umbilicus, penetrating the stomach; much inflammation and fever followed, and continued for a very considerable time. When the inflammation subsided, an opening remained, through which, when the tent was withdrawn, a fluid of whitish color flowed. The sides, instead of closing, turned in and no union could be induced. The man was therefore advised to keep the opening constantly plugged up. This he did for the remainder of his life, never withdrawing the plug but to gratify curiosity or to replace it with a new one. The opening was about one-third of an inch in diameter. The plug he used was generally cotton

² These two reports should be considered as one case. Either there is a mistake in the given name of the writers or both reported on the same case. The former seems most probable, since much of the text is identical word for word.

wick, twisted hard. The author saw him for the first time twenty-seven years after the injury. About November, 1790, he was admitted to the House of Industry at Dublin. The patient was then 65 years old, apparently in good health. He states that on removing the plug, after the man had taken milk, a part of the milk quite pure escaped through the opening; and the patient observed that when his stomach was empty of meat, and he took out the plug, a whitish fluid adhered to it that tasted sweet. He never felt any pain in the opening, nor inconvenience from any particular food. On examining his body after death the wound was found to penetrate the stomach in the center of the great curvature, and from the adhesions to the liver, colon, and integuments a very considerable stricture was formed, so as to give the stomach the appearance of a double bag, with the opening in the middle; the duodenum was enlarged beyond the size of the colon, and seemed to have in some measure performed the functions of a second stomach. The colon was firmly attached to the lower part of the stomach by a ligamentous substance, which Burrowes thinks must have been formed by the inflammation subsequent to the wound. All the other viscera were found normal.

Foubert, M.—*Mem. de l'Acad. Roy. de chir.*, vol. IV, p. 124.

Preserved in his museum the stomach of a man who died in the Hotel Dieu at Orleans. There was an opening connecting externally with a wound, into which the person, while alive, used frequently to inject different aliments, and digested them as well as those taken by the mouth. (Cf. Burrowes.)

Corvisart and Leroux, 1802—*Observation sur une ouverture fistuleuse à l'estomac. J. de méd., chir. et pharm.*, Par., vol. III, pp. 407-435.

State that Magedelaine Goré, aged 47, born in Roussigni, Department de la Manche, at the age of 20 was thrown down on stone steps while playing with other girls, and was unable to move for forty-five minutes. Remained in bed for three days, but returned to her work on the fifteenth day after the fall; always walked with the body bent over to the left after the accident. Eighteen years later she was suddenly taken with frequent severe attacks of pain, and a small tumor was observed. On the twenty-first day after the appearance of this tumor she grew nauseated and vomited. At the third attempt to vomit, the tumor opened in the middle and a watery fluid escaped. This wound never closed. Eight months after opening, food began to pass through the orifice, whereas up to this time only liquids had escaped. She was admitted to the ward of the internal clinic in Paris, and died six months later. Autopsy showed that the hole in the stomach was situated in the anterior wall of this organ, and the fistulous channel continued through the abdominal walls to the skin. The peritoneal membrane of the stomach continued with no apparent line of union with the portion of the peritoneum which lined the wall of the abdomen. The stomach had contracted such intimate union with the wall of the abdomen that it made a veritable continuity, simulating a congenital condition.

Gooch, 1802—*Suite d' observations sur les ulcères fistuleux a l'estomac.* J. de méd., chir. et pharm., Par., vol. III, pp. 503-527.

In May, 1768, was called to see a woman named Tovell, aged 60, of feeble temperament. About ten years ago, after a slight external injury, she experienced considerable pain in her left side in epigastric region. This condition of pain, at intervals of short duration, remained for ten years, when a tumor appeared over the region of the stomach and ruptured, allowing food to escape.

Second Observation.—One reads in the preface of Crollius of an observation addressed to Dr. Aegide Hertoghe by Mathias Cornax of a fistulous opening of the stomach. A peasant of a village of Bohemia received a wound while engaged in "étant à la chasse," which pierced the stomach near the cardiac orifice. The wound was large, and allowed food and chyme to escape, and Cornax considered it fatal. He recovered, however, although he continued to discharge food and drink from the wound in the stomach.

The first writings dealing with this case are as follows: Mathias Cornax, *epistola responsoria ad. doct. Aegydiu Hertoghe*. The first is found in Crollius, as above mentioned; the second in the appendix *De vulneribus lethalibus, ac non lethalibus*, of Bernard Suerus, of Rotembourg, physician of Vinsheim; the third in the annotations of the *therapeutique* of Gallen by Jul. Alexandrin, cap. 4, lib. 6; the fourth Schenckius (*obs. med.*, lib. 3, obs. 1); and the fifth in the *Observations et histoires chirurgicales*, collected by an anonymous writer, and printed at Geneve, in Chouet, in 1669.

Borel, physician, of Castres (*Petri Borelli, Histor. et observ. rarior. medic., phys. Cent. obs. 66*), reports on a mendicant who had a fistula of the stomach from which food was emitted. The fistula had existed for some time.

Third Observation.—Citizen Maillott received during the first skirmish at Kayserslautern, under General Hoche, a gunshot wound with bullet, which passed through clothing and pierced the skin, lodging under the xyphoid cartilage, from where it was removed. He suffered much after extraction, vomiting almost constantly for days. After having his life despaired of, he finally quieted down, and the wound showed a deep scar, involving a portion of the stomach. The ulcer, which penetrated into the viscera, five months after injury was the size of a 15-sou piece. It was round, and the margins hard and violet in color. He improvised an obturator, which supported him without pain. He removed this one day to satisfy the curiosity of some one, and observed an escape of air. Further examination showed him that the fistula communicated with the cavity of the stomach. He appeared in good health. Was discharged; condition good when seen eight years ago.

Fourth Observation.—Refers to the Strassburg dissertation by the two Wenckers.

Fifth and Sixth Observations.—Were those of perforating ulcers of the stomach not resulting in fistulæ—hence do not belong under this head.

Seventh Observation.—Petit, in 1710, reports a case of fistula due to carcinoma. The tract existed but three weeks—hence this case does not belong to the class under discussion.

Eighth Observation.—Taken from a thesis in 1730, in Leipzig, by Michael Ethmuller. He says that he saw a woman, aged 30, who had an opening on the left side in the epigastric region the size of a haricot, through which food and drink escaped. About ten years previous she had received a blow in the epigastric region by a wagon tongue, six months after which a spontaneous opening of the tumor resulted.

Hallé, 1802—*Réflexions générales sur les ouvertures fistuleuses de l'estomac.* J. de méd., chir., pharm., etc., Par., vol. IV, pp. 103–115.

Reviews the articles of Gooch and Corvisart and Leroux, but cites no new cases.

Dunglison, Robley—*Human Physiology*, pp. 510–528, 1838.

Mentions a case of Helm, of Vienna (Rudolphi, *Grundriss der Physiologie*, Berlin, 1821), one of Schenk^{*} (*Observ. Medic. Rar. Novarum*, etc. Francofurti, lib. III, 1609), and describes at length the case of a female patient at the hospital La Charité of Paris (Richerand's *Nouveaux Elements de Physiologie*, edit 13^{eme} par Berard aine, p. 72; Bruxelles, 1837), who had been gored by a bull and had a fistulous opening in the stomach. At the admission of the female into the hospital she ate three times as much as ordinary persons. Three or four hours after a meal an irresistible feeling compelled her to remove the dressing from the fistulous opening, so as to allow the escape of the food which the stomach could no longer contain, when the contents came out quickly, accompanied by more or less air. Experiments made on this half-digested food at the Ecole de Medicine showed that the changes which it had undergone were an increase of gelatin, the formation of a substance like fibrin, and a considerable portion of muriate and phosphate of soda and phosphate of lime. This patient could never sleep until she had emptied her stomach and washed it out by drinking infusion of chamomile. In the morning it contained a small quantity of thick, frothy liquid, analogous to saliva (which did not affect vegetable blues), with matters of greater consistence, and some completely opaque, albuminous flocculi, mingled with the liquid portion. The results of chymical experiments on this liquid were similar to those obtained on the analysis of saliva.

Smith, F. G.—*Medical Examiner*, July, 1856, p. 385.

Refers to the "case of the Esthonian peasant," reported by Gruenewald and Schroeder, who is said to have been experimented upon; and one by Circaud, *Journal de Physiologie*. (Cyc. of Anat. and Phys., art. Digestion.)

^{*} Von Grafenberg Schenckius.

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